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November 1983

Wheat

OUTLOOK & SITUATION

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Summary

While the historically hot and dry summer of 1983 devastated feed grain and soybean production, the U.S. wheat crop of 2.41 billion bushels was binned with minimal difficulties. Partially offsetting a sharp cutback in harvested acreage, yield per acre was the highest ever recorded in many States producing Hard Red Winter and White wheat. Total winter wheat output, at 1.98 billion bushels, was only 131 million below 1982's record. However, summer conditions did affect spring wheat (Hard Red and Durum) by reducing yields. That harvest was off significantly from 1982's record high, mostly due to large participation in acreage reduction programs.

This year's smaller wheat crop does little to reduce the 1983/84 supply from a near-record level because carryin stocks of old-crop wheat were the largest ever. But, because total domestic and export use may exceed the 1983 crop, stocks next June 1 could decline for the first time in 5 years.

The domestic sector will account for the increase in wheat disappearance during 1983/84. Reduced feed grain supplies at higher prices, compared with large supplies of low-priced wheat, will expand wheat feeding to livestock and poultry. This was confirmed by the October grain stocks report, which indicated that wheat fed during June-September totaled around 270 million bushels, the largest ever. For the June-May wheat year, this use may total 350 million bushels, the largest since World War II.

U.S. wheat exports during 1983/84 are expected to fall for the second time following the record shipments in 1981/82. The decline is the combined result of a leveling off of world wheat trade, a record 1983 global wheat harvest, aggressive competition from other exporting nations, and the continued strength of the U.S. dollar while some importing nations are strapped financially. Export loadings are likely to pick up from their early season pace, with 1.4 billion bushels of U.S. wheat eventually reaching foreign destinations.

Wheat prices at the farm have been slightly above a year ago, supported by this year's general price surge for feed grains and oilseeds, and a higher loan rate. Because farm prices are still below the loan level, brisk placements of wheat in the CCC loan program also tend to be supportive. The large supply and weaker export demand suggest the 1983/84 farm price may range from $3.50 to $3.70 a bushel, compared with last season's $3.53 average.

Wheat producers are facing almost identical decisions for the 1984 crop as they did last year. Participation in an acreage reduction program that includes a payment-in-kind (PIK) feature remains an option. The exception is that some program benefits have increased and some have decreased. For this reason, producers will again review their expected benefits before deciding whether to participate. The announced target price of $4.45 a bushel provides the strongest incentive for entering the 1984 program.

THE 1983/84 SITUATION

Acreage Reduction Cuts 1983 U.S. Wheat Production

In addition to an 11-million-acre reduction in 1983 planted area, the payment-in-kind (PIK) program prompted a further cut in the area harvested, so that almost 18 million fewer acres were harvested than in 1982. Nevertheless, generally favorable growing conditions and the idling of less productive land increased yields to an all-time high of 39.5 bushels an acre, producing 2.4 billion bushels, the third largest crop in history.

Last fall, *winter wheat* seedings were only about 4 million acres smaller than the area that produced the back-to-back 1981 and 1982 record crops. This indicated that the acreage reduction (ARP) and paid land diversion programs (PLD) would not be very effective in lowering 1983 production. Because price expectations were disappointing, growers responded favorably to the PIK option that was announced in January 1983, even though the winter wheat crop was in the ground. Farmers plowed down, cut for hay, and grazed livestock on some of the growing crop, so that the acres combined this summer were down more than 11 million from 1981 and 1982. However, offsetting some of the effect of reduced acreage were the highest yields ever recorded in many States producing Hard Red Winter and White Winter wheat. The total 1983 winter wheat output was 1.98 billion bushels, only 131 million below 1982's record.

Prospects for excessively large *spring wheat* supplies, the attractiveness of PIK, and the lowest prices in 4 years heavily influenced Durum, Hard Red Spring, and White Spring wheat growers to enroll nearly all of their base acreage in the 1983 acreage reduction programs. As a result, 7 million fewer acres of spring wheat land, mostly in the Northern Plains, were seeded than a year ago. While weather delayed planting, good soil moisture raised expectations for very high yields, similar to those for winter wheats. But, hot, dry summer weather accelerated ripening and reduced yields. The 1983 Durum harvest of 72 million bushels was the sharpest downturn ever experienced by that class, 51 percent from the year before. The same was true for other hard spring wheats; the harvest of 313 million bushels was 37 percent below 1982's record.

The quality of the 1983 winter wheat crop varies widely with the quality of hard bread-making wheats being off this year due to lower protein content while quality is generally good for the soft pastry wheats. The quality of both Durum and Hard Red Spring benefited from the hot dry weather with increased protein levels.

Feed Use Expands Sharply; Food Use Trends Up

The October stocks report confirmed the forecast that reduced feed grain supplies at higher prices relative to large supplies of low-priced wheat meant expanded wheat feeding to livestock and poultry during June-September. Apparent feed use during this period was around 270 million bushels, the largest ever. It is difficult to pinpoint the characteristics of this large disappearance, such as how much of each wheat class was consumed, by what kinds of animals, and where. Ordinarily, cattle feeding throughout the Great Plains wheat belt would be charged with the major share of this utilization. However, in the past few years, increased production of soft wheat in the Southeast—a feed grain deficit area—has made wheat a substantial feed ingredient in the area's growing poultry industry. This year's drought in the Corn Belt reduced available supplies of corn and drove up prices. Some soft wheat in that area probably substituted for or supplemented corn in feed rations, but just how much is uncertain.

The wheat feed use and residual category for 1983/84 is estimated at 350 million bushels, the largest since World War II. A special article in this issue provides a further analysis of the factors underlying this season's feed use forecast. An estimate of the distribution of wheat feed use, based on underlying supply and demand by class, suggests about half of the year's total feed disapperance may be Hard Red Winter, and about 40 percent Soft Red, with the remainder split between White, Hard Spring, and Durum.

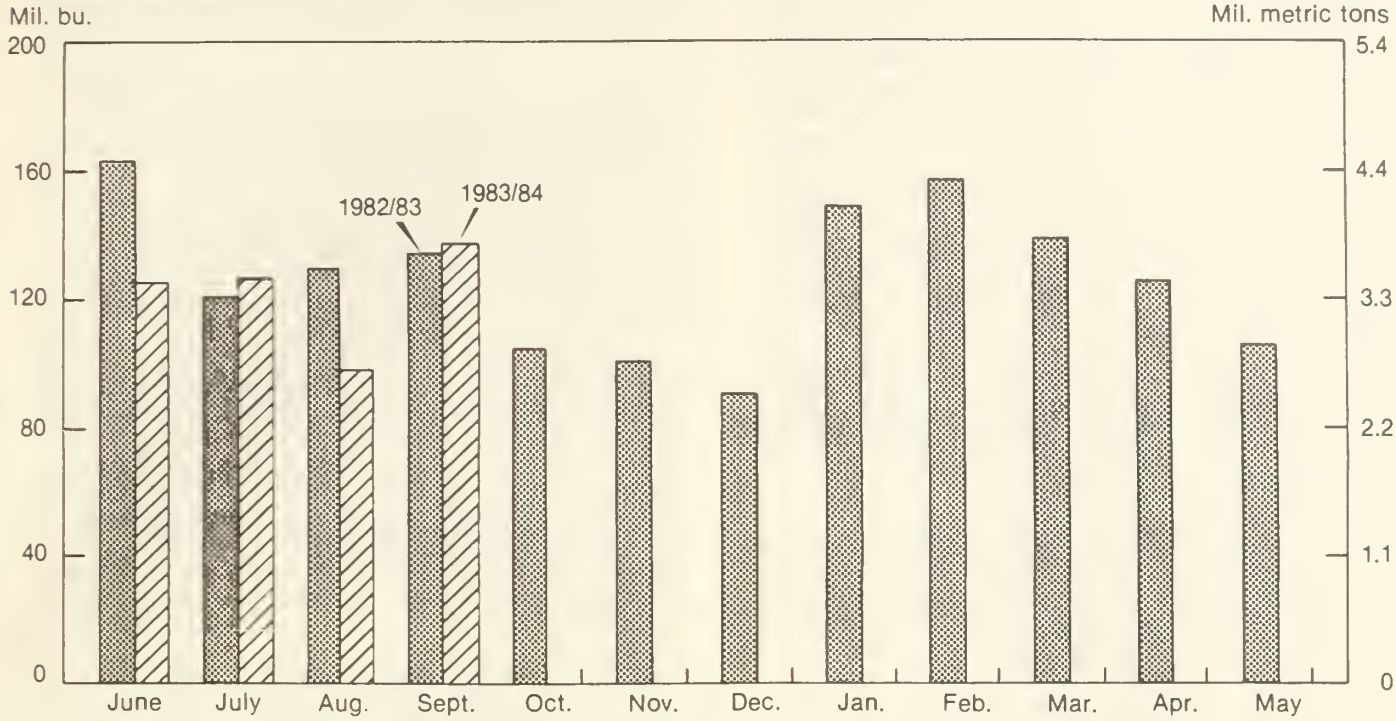
Wheat mill grind during June-September was up significantly from the same period a year earlier. However, a large share of the increased flour production reflects the earlier large flour sale to Egypt under a special export program. Thus, apparent U.S. food use is only slightly more than last year. Millers continue to take advantage of the low, stable prices and large supply by keeping inventories low.

Wheat: U.S. acreage, production, and yield

Class	Harvest		Production		Yield	
	1982	1983[1]	1982	1983[1]	1982	1983[1]
	Million acres		*Million bushels*			*Bushels/acre*
Winter	58.3	47.2	2,108	1,977	36.1	41.8
Durum	4.2	2.5	148	72	35.1	29.4
Other Spring	16.3	11.3	553	359	34.0	31.8
Total	78.8	61.0	2,809	2,408	35.6	39.5

[1]Preliminary.

U.S. Wheat Exports by Months, Marketing Years 1982/83 and 1983/84



Includes flour and products in wheat equivalent.

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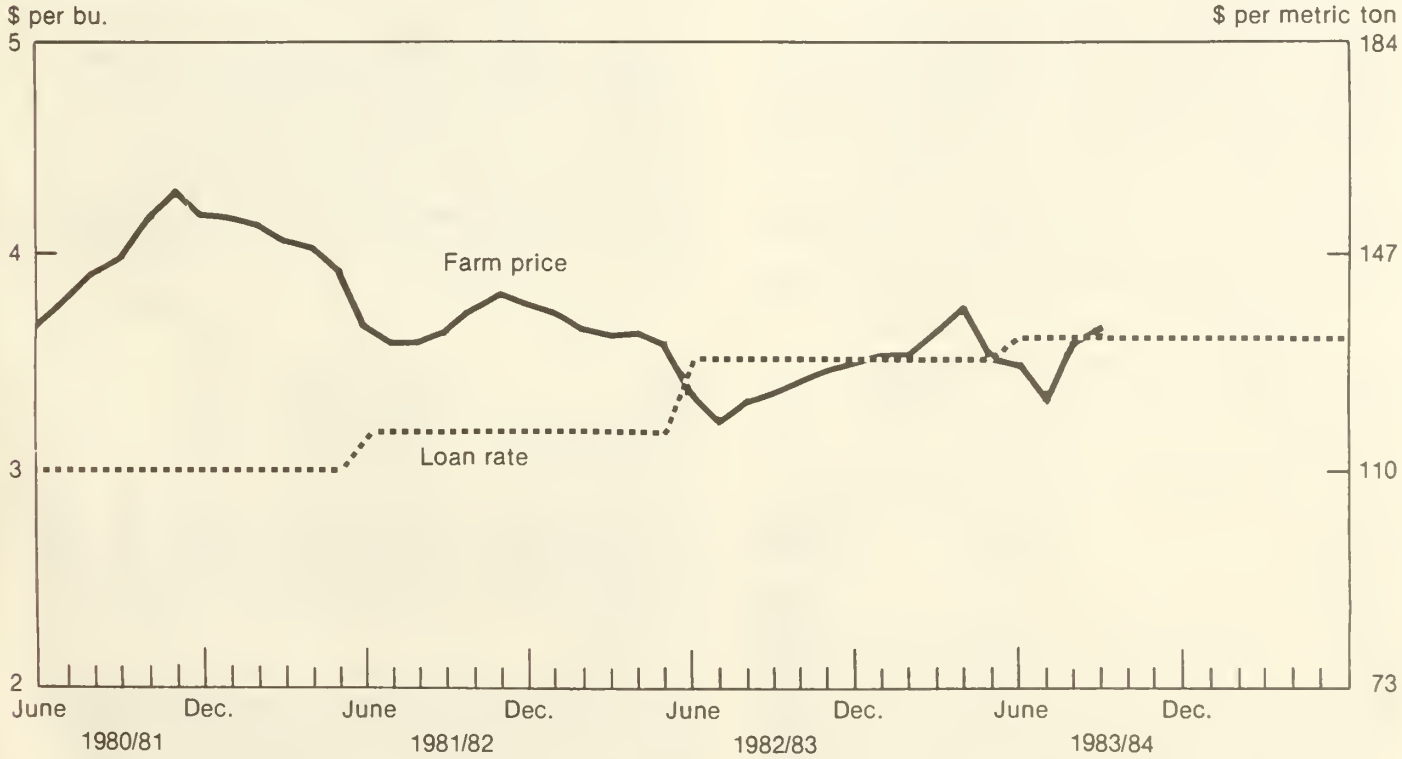
Wheat Prices Received by Farmers



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Exports Projected To Be Lower This Season

Last season, U.S. wheat exports took their first downturn after growing for 5 straight years to an alltime high of 1.77 billion bushels in 1981/82. The forecast of a second disappointing season for 1983/84, of 1.4 billion bushels—7 percent below a year ago—takes place at a time when record supplies and low farm prices prevail throughout the U.S. wheat industry. Indications of a global economic recovery are a possible plus for expanded wheat buying. However, the strength of the U.S. dollar and aggressive foreign sales by competing exporting nations indicate that the U.S. share of world wheat trade may drop from last season's 40 percent to 38 percent during July 1983-June 1984.

Total loadings during June-September were 12 percent below a year earlier with outstanding sales close to the pace a year earlier. Expanded shipments of wheat products, mainly flour to Egypt, added significantly to export volume for the same period.

The export weakness mostly reflects changed buying patterns by three major U.S. wheat purchasers; China, the USSR, and India. All three delayed early season buying relative to the past, each under different circumstances. India, with a record 1983 wheat harvest, was able to shop around for a good buy and bought from Argentina and Canada for the first time since the mid-1970's. China steadfastly deferred buying until the textile agreement was concluded; the Soviet Union appeared to delay buying until a new U.S./USSR long-term grain trade agreement was in place. These countries, along with Japan, South Korea, Brazil, Egypt, Morocco, and Nigeria, are expected to be the major buyers during 1983/84.

Wheat Prices Steady But Low

Although 1983/84 wheat supplies are almost unchanged from last year's record high, early season monthly average farm prices were reported about 5 percent above a year ago, probably supported by the general price surge in the feed grain and oilseed markets and large CCC loan placements. Sluggish export activity during June-September provided minimal price strength. However, activity in the CCC loan program, where the loan rate is $3.65 a bushel, seems to be an important marketing option for much of the 1983 crop. By late October, loans tallied over 340 million bushels, about 30 million lower than a year earlier. Last year's loan activity was directed toward entry into the higher paying farmer-owned reserve, with a loan rate of $4 a bushel.

Immediate placement into the reserve is not permitted for the 1983 crop. At their discretion, producers may redeem regular loans at any time and take advantage of market rallies, but these loans have less price-strengthening effect than the more restrictive redemption rules for reserve loans. The estimated 375 million bushels of PIK entitlement coming from the large reserve of stocks previously isolated from the market dramatically adds to the volume of free supplies, thus adding to downward price pressure.

For the first 5 months of the marketing year, farm prices averaged $3.52 a bushel. Overall, farm prices will likely fluctuate within the estimated season-average range of $3.50 to $3.70 a bushel. A pickup in export sales may advance prices periodically, while indications of favorable 1984 crop development and reduced program participation will limit advances. The impact of the $3.30-a-bushel loan rate and prospects for a substantial increase of harvested area in 1984 would also undercut price expectations.

Wheat: Supply and disappearance

Item	June-Sept.	
	1982/83	1983/84
	Million bushels	
June 1 stocks	1,164	1,543
Production	2,809	2,408
Total supply[1]	3,974	3,952
Exports	546	482
Food	206	208
Seed	37	37
Feed	198	272
Total disappearance	987	999
October 1 stocks	2,987	2,953

[1]Includes imports.

THE 1984 WHEAT PROGRAM

1984 Crop Faces Another Acreage Reduction Program

Shortly after wheat growers made their cleanup pass over the 1983 crop, their attention turned to the 1984 crop. Although producer enrollment in the 1983 Government acreage reduction programs was exceptionally heavy, wheat supplies remain far in excess of needs.

To help strengthen wheat prices and limit a further buildup in supplies, USDA announced the 1984 wheat program in August. For the third successive year, producers are asked to participate in an acreage reduction program (ARP). Also, an optional payment-in-kind (PIK) program is offered for the second year. Voluntary participation in ARP entitles producers to target price protection and use of the price support loan program. Features of the 1984 program are compared with those for 1983 as follows:

Provisions	Unit	Crop 1983	Crop 1984
ARP	(% of base acres)	15	30
PLD	(% of base acres)	5	0
Partial PIK	(% of base acres)	10-30	10-20
Whole base PIK	(% of base acres)	100	0
PIK payment rate	(% of base yield)	95	75
Target price	($ per bushel)	4.30	4.45
Regular loan rate	($ per bushel)	3.65	3.30
Reserve loan rate	($ per bushel)	3.65	3.30
Advance deficiency payment	($ per bushel)	.325	0
Farmer-owned reserve		[1]yes	(2)

[1]Entry permitted only after maturation of regular CCC loans. Storage payment is 26.5 cents per bushel per year. Interest is charged for the first year. [2]Immediate entry into the farmer-owned reserve for the 1984 crop is not permitted. A review of the size of the reserve will be made before 1984 crop loans reach maturity. A ceiling may be placed on the reserve size.

Program signup will take place between January 16 and February 24, 1984. Signup contracts will be considered binding, and liquidated damages will be assessed for failure to comply with the program requirements.

What are the options?

Growers will choose among 3 options: 1) nonparticipation, 2) participation in the ARP, or 3) participation in the ARP and PIK.

Nonparticipants will not be eligible for any program benefits. Under this option, producers expect their market return from production on acreage that would have been idle under the program to exceed foregone program benefits. Of course, this situation is highly dependent upon the final harvested yield per acre and the expected sale price—both of which the grower has minimal control over. If a multitude of producers choose this option and plant fence-to-fence, even the $3.30-a-bushel loan rate may not serve as a market-price floor, because producers of a large portion of the 1984 crop will not be able to use the loan as an alternative to selling on the market. There would be little protection from falling prices.

Participation in the 30-percent ARP protects against the risk of below-loan-level market prices and may also result in a deficiency payment. The maximum payment would be $1.15 per bushel times the farm's established program yield for each acre of base planted. The payment rate would be the difference between the target price and the 5-month average of farm prices or the loan rate, whichever is higher. The 1984 target price of $4.45 a bushel is the strongest incentive to participate in the 1984 program. It offers the producer revenue protection in the 1984/85 wheat marketing year for which price prospects are not highly optimistic.

The 10-20 percent PIK program is an added option to the 30-percent ARP. This feature is essentially the same as in 1983, except that participants will not be able to receive entitlements from CCC stocks. Producers signing up for the 1984 PIK program will agree to obligate their outstanding reserve or regular CCC loans for entitlement, or if these loans are not available, a participant agrees to use a 1984-crop loan as a PIK payment—harvest for PIK. The 1984 PIK payment rate is 75 percent of the farm's program yield, down from 95 percent in 1983. Acreage idled for PIK payment is not entitled to deficiency payments.

On the surface, the smaller PIK offer rate, the absence of a cash diversion, the increased ARP percentage, and the reduced loan rate would appear to lower the incentive for program participation. The provision that commits a producer at signup, without allowing for a last-minute dropout, may also deter some participation. In past acreage reduction programs, spring wheat growers were not required to make such an early commitment, and winter growers could sign up and then drop out if the outlook changed as the crop developed.

Producers that are double-cropping wheat and soybeans may find it too costly to give up the production of higher-priced beans.

On the other hand, the current outlook for 1984/85 season-average farm prices to hover near the $3.30 loan rate suggests that the income insurance offered by the 1984 deficiency payment and support loan should interest at least half of the growers, down from three-fourths in 1983. Heavy grower participation in the 30-percent acreage reduction and PIK program would brighten prospects for a more favorable wheat outlook in 1985/86. For a further analysis of participation prospects, see the special article.

WORLD WHEAT OUTLOOK

Another Record World Wheat Crop Imminent

Global wheat production has expanded in each of the last 5 years. Total 1983 output is estimated at a record 481 million metric tons, topping the 1982 record about 1 percent and the 1981 crop by 7 percent. Currently dominating the outlook is the expectation that Southern Hemisphere wheat crops will be well above those of recent years, possibly up a third from a year ago, largely on the strength of a record Australian harvest. This increase, combined with record 1983 outturns in India and China, outweigh reduced production in the United States, Canada, the European Community (EC), the USSR, and Eastern Europe. Of the world's major wheat producers, the United States had by far the largest cutback, yet the crop was off only 14 percent.

Global wheat utilization is expected to continue its upward trend in 1983/84, possibly rising nearly 2 percent to an alltime high of 476 million tons. Use of wheat for feed is likely to rise due to the relatively greater availability of wheat over coarse grains, and because reduced crop quality in some areas will result in more feed-quality wheat.

The record 1983 production portends an appreciable addition to already record large stocks in the hands of exporting nations. Even with stronger demand, world wheat stocks are likely to build. Projected stocks at the end of the 1983/84 marketing year would represent 21.6 percent of the world's yearly use, compared with 21.0 percent last year.

World Trade Up Slightly

With supply sharply higher than demand, it should be a buyer's market for wheat in 1983/84, although economic difficulties in many nations will limit their ability to take advantage of this situation. Thus, competition among exporting countries for an expected limited expansion in world trade will remain keen, even more so than in 1982/83. This year's trade is projected at 101 million tons (July-June), only 3 percent above a year ago. There is the potential, however, that world import demand may rise because of the tightening world coarse grain situation, which is causing high feed grain prices and encouraging wheat feed use.

Import needs of the USSR, China, and India are always important in setting the world wheat trade outlook. For the 1983/84 marketing year, the total needs of these buyers are expected to be down from a year ago, principally due to record production in India and China and sharply higher coarse grain production in the USSR. Total wheat imports of other significant importers such as Egypt, Mexico, and North Africa continue to be tuned to the availability of credit.

The combined major exporters, Canada, Australia, and Argentina, are expected to have sharply higher exportable supplies in 1983/84. Thus, meeting competitors' offers likely will be the strategy for the season, combined with an emphasis on providing credit to importing countries and extending existing agreements. In total, these nations' exports will be up 14 percent from a year ago, principally due to Australia's recovery from the drought-reduced 1982/83 crop. A somewhat lower 1983 wheat harvest in the EC will not alter available stocks to the point that exports cannot be maintained at last year's historically high level. U.S. wheat export prospects depend heavily upon what competing nations do to help move their large supplies into export channels and the competitiveness of U.S. wheat under this situation. The current U.S. 1983/84 export forecast of 38 million tons is down about 5 percent from last season.

WHEAT BY CLASS

HRW Crop Down; Supply Still Sets Record

The 1983 Hard Red Winter (HRW) wheat crop of 1.19 billion bushels is the second largest on record. Although the harvest was hampered by rains, yields were record large in many HRW States. Thus, ideal growing conditions, coupled with expanded use of improved varieties, offset a significant reduction of nearly 7 million harvested acres due mainly to acreage reduction programs. Quality of the 1983 crop in terms of protein and baking is lower than in 1982, while test weights, average grade, and milling quality are up. With the release of farmer-owned reserve (FOR) stocks from previous crops through the PIK program, buyers should have few problems obtaining desired quality.

The total 1983/84 HRW supply will top 1.9 billion bushels, 151 million more than last year's record. This sizable volume is a significant negative pricing factor compared with last season, because PIK entitlements and delayed reserve entry will increase readily marketable supplies during the early season low-price period. Tight holding by producers at cash prices below the $3.65-a-bushel loan rate, increased use of the loan due to increased eligibility of 1983 production, and slow liquidation of PIK entitlements induced by the 5-month storage payment may be somewhat supportive of price.

The outlook for expanded disappearance this season is confined to a projected surge in HRW feed use during the period when feeders can buy wheat at extremely attractive prices relative to feed grains. Total 1983/84 exports are projected to be slightly under last season's 679 million bushels. Much depends on purchase scheduling by major buyers and the USSR under the new 5-year grain trade agreement, which requires increased buying of U.S. grain on an October/September year.

HRS Crop Cut Sharply, Free Stocks To Increase

The sequence of record Hard Red Spring (HRS) wheat harvests in 1981 and 1982 came to an abrupt end with the sharp decrease in 1983 production. This was due principally to heavy compliance in acreage reduction programs, estimated to be over 95 percent of the wheat base acreage. It also reflects sharply lower yields relative to last season's record 32.5 bushels per acre. For 1983, 10.6 million harvested acres combined into 313 million bushels or 29.5 bushels an acre. Very hot and dry weather during late maturing resulted in above-average crop quality— 15 percent and higher protein content was prevalent in many areas. Milling and baking quality is judged very good to excellent.

Even though the 1983 output was down more than a third, record carryover stocks were offsetting, and the 1983/84 HRS supply is only 13 percent below last year's alltime large 852 million bushels. This year's exceptional quality has the potential to spur increased domestic use. Millers may find use of HRS in bread flour blends economical, if the HRS price spread over HRW does not become exaggerated. The high quality could also encourage overseas buyers. However, competition from another near-record Canadian wheat crop is likely to hold 1983/84 exports to slightly under last year's above-average season (table 2).

With expectations of the reduced 1983 crop, harvesttime prices rose about 30 cents a bushel above last year's levels, when harvest and supply were record large. Somewhat lower supplies may support prices this season, but pressure of large quantities of reserve stocks coming available as PIK entitlements is overhanging the market. Immediate entry of the 1983 crop into the reserve will not be a marketing option. Thus, HRS free stocks will expand during 1983/84, a reverse of the past two seasons when heavy use of the FOR decreased readily marketable supplies.

Reduced 1983 Crop Turns Durum Supply Outlook Around

Back-to-back record Durum harvests in 1981 and 1982 often pushed market prices below the loan level during those marketing years. As a result, growers enrolled heavily in the 1983 wheat program, and plantings were the lowest since 1970—2.5 million acres, compared with 4.4 million in 1982 and 5.9 million in 1981. Producers harvested the smallest area and binned the smallest crop in over a dozen years. North Dakota's production was down 51 percent from 1982 and 58 percent below 1981's alltime high.

Although the 72-million-bushel 1983 Durum harvest is down sharply, the record carryover from last season will be somewhat offsetting. The 1983/84 supply will be only 43 million bushels short of last year's record 249 million. Considering that 1983 Durum production is also down in other world growing areas (Canada, Western Europe, North Africa, and the Eastern Mediterranean), U.S. Durum exports could rise 20 percent above a year ago. The impact of reduced supplies and increased demand is reflected in farm prices which now show a premium of about 40 cents a bushel over the loan. During the past few seasons, Durum growers placed over 100 million bushels in the farmer-owned reserve. These supplies are not marketable without penalty because the wheat reserve is not in release status. However, 1983 PIK participants will receive entitlements that could release up to half of these stocks because spring wheat producers who have both Hard Red or Durum in the reserve can specify the class they want to receive as their PIK entitlement. This will increase readily saleable supplies, but farm prices are still likely to remain considerably above the loan rate all season.

SRW Supply Off Sharply

While a good portion of the Nation's corn and soybean growing area suffered from devastating hot and dry midsummer weather, the 1983 Soft Red Winter (SRW) wheat crop (principally grown in the same area) was binned with minimal difficulties. However, large enrollment in the acreage reduction programs reduced SRW harvested area about 3.5 million acres from a year ago. Although yields above 40 bushels an acre prevailed, the harvest was down 102 million bushels from 1982. The 1983 production in Northern SRW producing States was actually above that in 1982, but double cropping areas of the South reaped lower harvests. Crop quality is generally considered good, with test weights much better than than a year ago.

While carryin stocks of old-crop SRW are at a 6-year high, the smaller crop causes the 1983/84 supply to be the smallest in 3 years. A distinction for this year's SRW disappearance outlook is that domestic use is projected to outstrip export business, a situation unparalled for any wheat class in this recent era of expanding wheat exports. A significant amount of SRW will be used as animal feed in response to the wheat/feed grain price ratio that developed from the impact of this summer's drought. From the Corn Belt to the Southeast, corn commanded a significant premium over SRW, particularly during the SRW harvest.

The outlook for exports may be one of the poorest in recent years. Export commitments as of early November were about half of a year ago and a third of those in 1981. The past two seasons were dominated by very large sales to China. This year, Chinese wheat buying from the United States was virtually halted as a reaction to an unresolved textile trade agreement. Although that agreement was concluded, total Chinese wheat purchases in the 1983/84 marketing year remain uncertain because of their record 1983 harvest and their scheduling of purchases under the U.S./China grain sales agreement, which provides for purchases of at least 6 million tons each calender year.

So far this season, loan entry has been a major factor supporting farm prices 5 to 10 percent above a year ago. Still, prices are below the $3.65 national average loan rate.

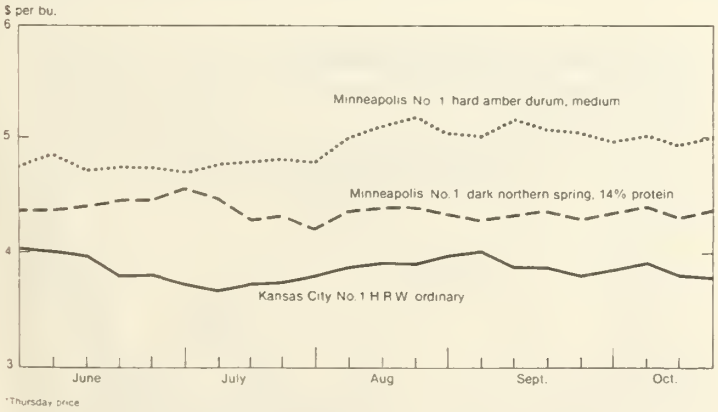
Large White Wheat Harvest Creates Record Supply

White wheat was the only class posting a production increase in 1983. Despite reduced planted and harvested area due to heavy participation in the acreage cutback programs, 10 percent more wheat was binned than in 1982. The 1983 crop was the third largest on record, because excellent growing conditions produced historically high yields, nearly 63 bushels an acre. Washington, the largest producer of White wheat, gathered an average 63.7 bushels a harvested acre, nearly 15 more than last year.

Coupling this banner output with record 1983/84 carryin stocks, the White wheat supply rose to 470 million bushels—by far the largest ever. In perspective, this supply could provide enough wheat to meet the requirement of two typical export seasons without further production. With growth in domestic use limited, this excess emphasizes the importance of exports to White wheat's supply/demand and price outlook. Prospects for 1983/84 are dim for overseas business because Australia is expected to vigorously return to the world market after a disastrous 1982 crop. Additionally, India, often a major buyer of White wheat on the world market, may limit purchases because of a record 1983 harvest.

White wheat prices have been pressured by the large supply and the prospect of a sizable stock buildup at yearend. However, much of the 1983 production is eligible for loan placement, which will tend to maintain farm prices around $3.65 a bushel for much of the season.

Cash Wheat Prices, 1983/84*



*Thursday price

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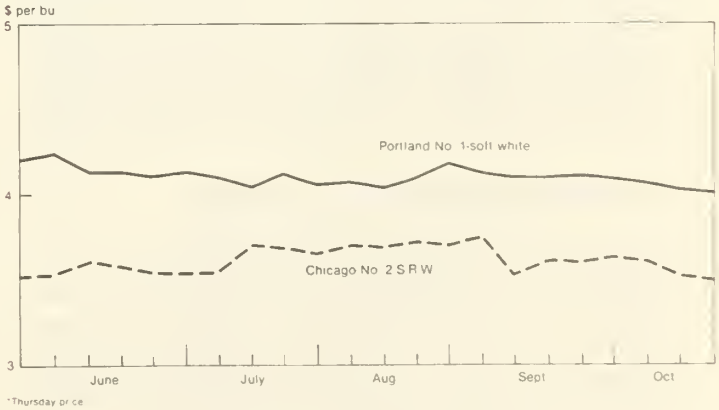
Cash Wheat Prices, 1983/84*



*Thursday price

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Factors Affecting U.S. Wheat Feed Use

by

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ABSTRACT: Wheat feeding has been highly variable since wheat loan rates were restructured in 1964, making wheat more price competitive with feed grains. Most wheat feeding occurs during the first period (June-September) of the wheat marketing year. A regression model indicates that first-period wheat feeding primarily depends on the wheat/corn price ratio, the number of poultry and cattle on feed, and the free supply of wheat relative to corn. These variables almost completely explained the 272 million bushels fed during June-September 1983. The price ratio was found to be an extremely important explanatory factor. The model suggests that a 10-percent drop in the ratio boosts wheat feed use by about 35 percent.

KEYWORDS: Wheat, wheat feeding, feed model, regression.

Wheat feeding is on the rise and is projected to reach 350 million bushels in 1983/84, the largest quantity fed since 1943/44[1].

During World War II, wheat feeding was subsidized by the Government in an effort to reduce wheat inventories and to increase output of meat, milk, eggs, and animal fat. Wheat feeding decreased in the 1950's because wheat loan rates kept wheat prices at levels that were not competitive with feed grains.

Since 1964, when wheat loan rates were lowered to reflect wheat's feeding value, wheat feeding has followed a cyclical pattern with lows near 35 million bushels and highs over 200 million (figure 1). In years when total wheat feeding was below 75 million bushels, most feeding occurred on farms where the wheat was grown. But, when total wheat feeding went up, most of the increase was because of wheat purchased for use in animal feeds by processors, commercial feeding operations, and farmers.

June-September Period Most Important

Most wheat is fed during the first period (June-September) of the wheat marketing year (figure 2). During this period wheat is most abundant and corn and sorghum stocks are generally small. Also, prices are seasonally low for wheat and high for corn and sorghum, especially in feed grain deficit areas. Since 1980, June-September wheat feeding has increased relative to feeding of other grains (figure 3).

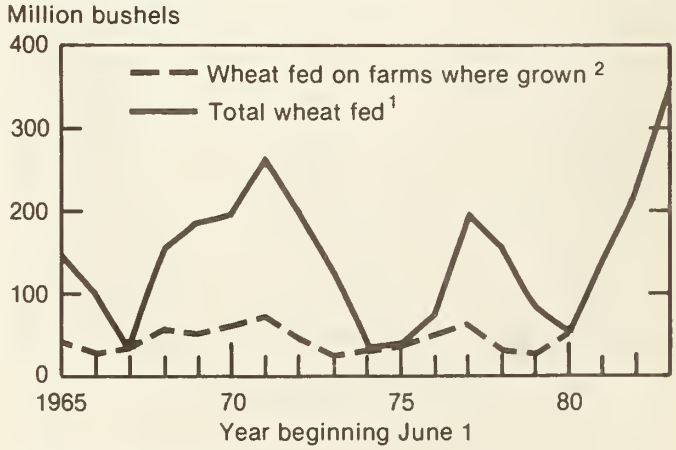
[1]Wheat feed data are derived as a residual estimate in the supply and disappearance balance sheet, so they are affected by errors in any of the other supply and use components. Thus, the terms wheat feed use or wheat feeding alternatively may be termed apparent feed use or feed and residual use.

Wheat Feeding by Regions

Until recently, the Hard Red Winter Wheat region, particularly the Southern Plains, was considered to be the heart of the wheat feeding area. The concentration of cattle feedlot operations there along with large supplies of wheat have been conducive to wheat feeding. Cyclical changes in cattle feeding in western States are usually accompanied by changes in wheat feeding (figure 4).

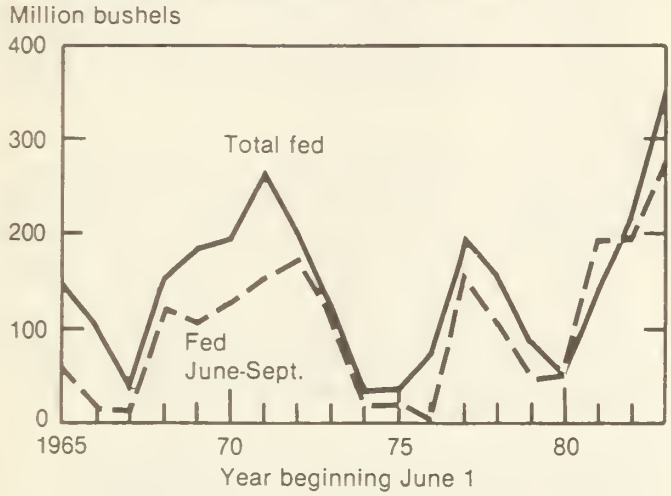
Another area which has grown in wheat feeding in recent years is the Southeast and Delta. Large supplies of Soft Red Winter Wheat, the result of increased double-cropping of wheat and soybeans, coupled with low

Figure 1
Wheat Feeding Cycling Upward



1 Residual approximates feed use.
2 Data not available after 1980.
1983 Projected.

Figure 2
Most Wheat Fed During June-September



1983 Projected.

Figure 3
June-September Wheat Feeding Increases Relative to Other Grains

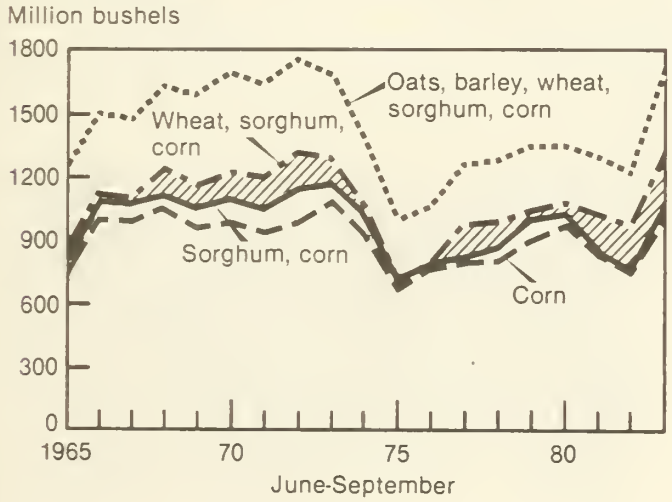
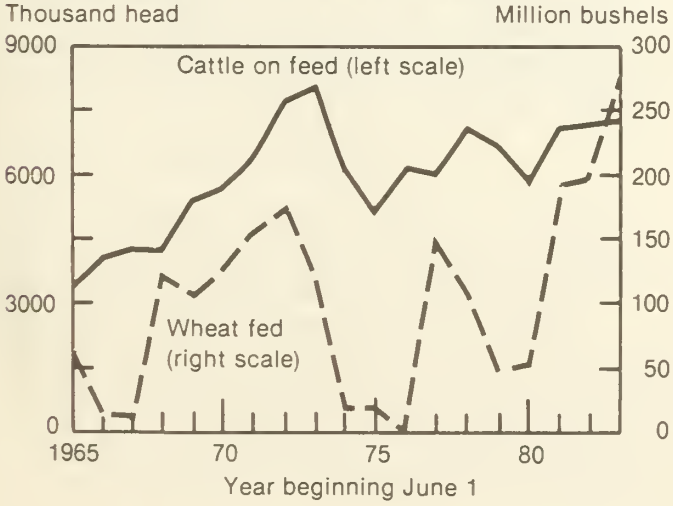


Figure 4
Cattle on Feed in 7 Western States Account for Some Wheat Fed (June-September)



wheat/corn price ratios, have made wheat feeding more profitable in this region. Increased poultry production and movement of broiler operations into this feed grain deficit area have pushed up the total demand for feed and thus for wheat in this area.

Variability of Wheat Feeding

Wheat feeding is highly variable. A relative measure of dispersion is the coefficient of variation—the standard error of a data series divided by its mean value. Compared with feed use and exports, wheat feeding has the highest coefficient of variation. The following table indicates the coefficient of variation of the components of wheat demand:

Time period	Feed use	Food use	Exports
1960-69	74.1	2.2	14.1
1970-79	56.4	5.6	22.0
1980-83	66.6	1.6	10.2

This large degree of variation is partly due to the residual component in wheat feeding data and partly due to the variability of the factors determining wheat feed use. This variability also explains why wheat feed use has received so much recent attention, despite its small claim on total demand.

Major Determinates of Wheat Feed Use

Wheat is higher in protein and at least as high or higher in energy content than corn. Because the higher protein content is not accompanied by an increase in lysine, it is usually recommended that rations be adjusted to meet lysine needs. This may mean letting protein levels go a little high and substituting wheat on a pound-for-pound basis with corn.

Previous research and logic indicate that wheat feeding is related to a wheat/sorghum or wheat/corn price ratio and to the number of cattle on feed. It also seems likely that wheat feeding is related to poultry numbers and to the supply of wheat relative to other feed grains, a variable especially relevant for on-farm feeding.

Because wheat feeding has become more concentrated in the first period of the wheat marketing year, a single-equation regression model was developed to predict wheat feeding for this period. The estimation period was 1969/70-1983/84. Variables used were as follows:

WFDP1 = Wheat fed in the first period of the wheat marketing year in million bushels.

PRICE = The national average farm price of wheat divided by the national average farm price of corn for the June-September period. The crop prices are unweighted averages of monthly prices.

COF = Cattle on feed on July 1 in 7 western States (Texas, Oklahoma, Colorado, Kansas, Nebraska, California, and Arizona), in thousand head.

POULTRY = Average number of birds fed (all classes) during corn marketing year, in millions.

SUPPLY = June 1 free stocks of wheat plus winter wheat production divided by June 1 free stocks of corn.

DV76 = Dummy variable for 1976 when the wheat feeding residual was much lower than expected. This may have been the result of tight holding by wheat producers and statistical sampling error.

The results of the analysis, shown in the following regression equation, indicate that wheat feeding during June-September is highly responsive to price and cattle on feed. The poultry and supply variables are also statistically significant. Numbers in parentheses below the estimated coefficients are t-values—measures of statistical reliablity. A "t" value of 2 and above indicates statistical significance at the .05 level. The coefficient of determination or R^2 shows that 96 percent of the variation in wheat fed is explained by the regression equation. The Durbin-Watson (D.W.) test for autocorrelation among the disturbance terms was indeterminate.

$$\text{WFDP1} = -167.908 \underset{(-9.30)}{-3.462\ \text{PRICE}} + \underset{(9.62)}{.078\ \text{COF}} + \underset{(3.00)}{.032\ \text{POULTRY}} + \underset{(2.34)}{.802\ \text{SUPPLY}} - 138.032\ \text{DV76}$$

$R^2 = .96$ D.W. = 2.38

The coefficients of the above regression equation were derived using the 272 million bushels fed in 1983 as an observation. Without this added observation, the model predicted that 286 million bushels would be fed during June-September 1983. With the 1983 estimate included, the model predicts 282 million bushels fed.

The regression suggests that, on the average, a 10-percent drop in the wheat/corn price ratio boosts wheat feed use by 35 percent. This seems realistic. However, the coefficient for cattle on feed indicates that by adding 1 animal to a feedlot, wheat feeding would increase by 80 bushels, an unrealistic amount. The correlation coefficient for cattle on feed and the price ratio is .49—an indication that some correlation exists, but not to a great degree. It is possible that the cattle on feed variable is also acting as a proxy for some other variable not specified in the model.

The unrealistic multiplier effect of the cattle on feed variable cautions against using the model in this manner. Despite this restriction, the model predicts well and can best be used as a tool in making pre-season forecasts.

The Participation Decision for the 1984 Wheat Program

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ABSTRACT: Example budgets indicate that the 1984 wheat program may offer higher net returns than nonparticipation for many wheat growers. Because the program was announced early, an early participation decision allows a high proportion of total variable production costs to be avoided by idling land. That, and a large expected deficiency payment rate, will make both the 30-percent acreage reduction program and the payment-in-kind program especially attractive to spring wheat growers and to winter wheat growers who decided to participate before planting. Even if winter wheat growers seeded their whole base this fall, participation in the 30-percent acreage reduction program could still raise net returns, thus the difference between planted and harvested winter wheat acreage should be greater than normal in 1984. The sample budgets indicate that the 1984 acreage reduction program offers about the same financial benefits as the 1983 acreage reduction and cash diversion program, but that the 10-20 percent PIK is not as attractive as a year ago. Consequently, 1984 harvested acreage of all wheat could rise 15 to 30 percent above 1983's 61 million acres.

KEYWORDS: Wheat, acreage reduction program, payment-in-kind program, budgets, participation.

The 1984 wheat program, announced in August by the USDA, combines an unusually high acreage reduction requirement with a continuation of the payment-in-kind (PIK) program. The 30-percent acreage reduction program replaces the combined 20-percent acreage reduction and cash diversion requirements in the 1983 program. The 1984 PIK is 10 to 20 percent, down from this year's 10 to 30 percent, and the PIK offer rate has been lowered from 95 to 75 percent of program yield. Many analysts have concluded that the revised program provisions lessen the incentives to participate. This article evaluates that conclusion.

The level of participation will be an important factor shaping the outlook for the 1984/85 wheat market. Low participation could boost the 1984 crop sharply, raising the prospect of even higher stocks, with prices dropping to near the 1984/85 loan rate of $3.30 a bushel. Because 1983/84 carryover stocks are likely to be so large, even high participation may not change the price outlook appreciably, but it could prevent a further stock buildup.

Example Farms Provide Insights

Some of the major factors that farmers may consider when deciding whether to participate in the 1984 program can be analyzed by using farm budgets for alternative planting strategies. Some key assumptions for developing example budgets include the following:

- The examples use 100 acres of wheat base. Three options are considered: (1) nonparticipation—the whole base is planted to wheat and harvested, (2) a 30/0 option where 70 acres are planted and harvested and 30 acres are idled under the acreage reduction program, and (3) a 30/20 option where 50 acres are planted and harvested, 30 acres are idled under acreage reduction, and 20 acres are idled for PIK.
- For winter wheat, net returns under these three participation options are estimated for single-cropped wheat and wheat double-cropped with soybeans.
- Expected wheat and soybean yields are slightly lower than the records set in 1982 and 1983. Yields rise slightly as more of the base is idled, reflecting retirement of marginal land first.
- Program payment yields are established by USDA at 34 and 28 bushels an acre for winter and spring wheat, respectively.
- The expected selling price of wheat is $3.30 a bushel, the national average loan rate. The price during the first 5 months of 1984/85 is expected to average at or below the loan rate, triggering the maximum deficiency payment rate of $1.15 per bushel ($4.45 minus $3.30).
- Soybeans are expected to sell for $6.75 a bushel.

Winter Wheat Growers Face Many Alternatives

Developing representative budgets for winter wheat program options is difficult, because there are several classes of winter wheat with differing production costs, yields, and land use practices, such as double cropping and summer fallow. Also, conservation use acreage (CUA) is managed very differently across wheat

growing regions. Tables 1 and 2 are sample budgets that treat winter wheat as a single crop, making no distinction for Hard Red Winter (HRW), Soft Red Winter (SRW), or White wheat. The tables are identical on the income side but differ on the expense side.

Table 1 estimates expected net returns for a grower who made the participation decision in the late summer or early fall of 1983. The August 1983 announcement of the wheat program allowed growers to decide on participation before planting winter wheat. Thus, the costs of production that the grower may choose to incur or avoid are the total variable costs of planting, growing, and harvesting the 1984 wheat crop. These costs are assumed to be $60 an acre. Data indicate SRW costs exceed those for HRW; however, any bias caused by ignoring this difference is partially offset by the higher yield potential of SRW in many States, which is also not considered.

SRW growers in the Southeast generally double crop wheat with soybeans. About 90 percent of wheat acreage and 50 percent of soybean acreage is double cropped. Although many growers report no loss in double-cropped soybean yield compared with a single crop, some reduction occurs on average because the risk of planting late is higher. A double-cropped soybean yield of 22 bushels an acre is assumed, 6 bushels below an assumed single-crop yield of 28 bushels. Variable costs of soybean production are assumed to be $95 an acre.

Management costs of conservation use acreage vary widely. Some choices for a winter wheat grower who decides on participation prior to planting include the following:

- Plant a cover crop such as oats. Seed would be cheaper than wheat seed, and the soil would be protected from erosion. This would be favored in areas such as the Eastern Corn Belt where there would be little opportunity to use the wheat on the CUA, such as for winter grazing. Wheat straw is a valuable secondary product in this area, but ample supplies may be obtained from wheat acreage to be harvested for grain.

- Plant wheat. This was a desirable option in the Southern Plains in 1983. A farm management specialist from Oklahoma recently estimated that 50 percent of 1983 program participants in that State grazed CUA and 40 percent hayed CUA. The remaining 10 percent had to clip or disk the CUA by the disposal date. Rental rates for CUA grazing ranged from $10 to $25 an acre. Haying could yield up to 2-1/2 tons an acre, and hay sold for about $50 a ton this summer. However, haying is very risky because of spring wetness which could reduce quality. So for planning purposes, an expected hay price would have to be well below the $50 average. For 1984, spring haying and grazing are not permitted, so the major reasons why a grower would plant wheat on CUA would be for winter pasture and to allow postponement of the participation decision until January or February.

- Plant nothing. This alternative is probably the cheapest way to manage CUA. The cover crop would consist of volunteer wheat stands in an area like the Plains, or soybean stubble in the Southeast. There could still be some variable costs for operations such as weed control, disking, and plowing.

In table 1, variable costs for managing CUA are assumed to be $20 an acre. This could be low if wheat is planted and managed as if it were going to be harvested for grain. However, it could be high if soybean stubble or volunteer stands are approved as cover. Expected net returns for single-cropped winter wheat for both participation options exceed the return under nonparticipation, although the acreage reduction program alone appears more attractive than the 20-percent PIK. The return under nonparticipation would be even lower, if large wheat supplies in 1984 push prices below the loan rate and the nonparticipant—not eligible for the loan—has to sell at that price. At such a market price, there also would be reduced returns under the 30/20 option, assuming the grower sold the PIK bushels at below the loan rate, because they are also ineligible for loans.

Some growers have indicated that they do not intend to participate in the 1984 wheat program. This would be logical in areas where growers have price and yield expectations well above those in the table. If table 1 is reworked using a price of $3.65 a bushel and yields 2 bushels an acre higher, net returns for the single-crop wheat grower would be as follows:

Nonparticipant	30/0	30/20
$7,140	$6,813	$6,339

Net returns for double-cropped wheat indicate that the ARP alone may be preferred for the grower represented by table 1, and that nonparticipation is preferable to the 20-percent PIK. For each acre idled on average under the 30/0 option, the grower forgoes a net return from the market of $58.80 ($22.00 from soybeans and $36.80 from wheat). But, the grower gains an average of $91.20 an acre in deficiency payments (the total deficiency payment divided by the 30 idled acres) less $20.00 in conservation costs for a gain of $71.20 an acre. So, it pays to participate. Under the 30/20 option, the grower gives up the deficiency payment on the PIK CUA, so that the remaining deficiency payment and the value of PIK are less than the net return forgone from the wheat and soybeans, giving nonparticipation a higher net return.

Table 2 presents budgets for the winter wheat grower who planted wheat on the full base and decided to wait until the signup period to make the participation decision. Some of the variable costs the grower faced in the summer are now expended, so the remaining variable costs are assumed to be $20 an acre. Disposal costs on CUA are assumed to be $5 an acre. The lower costs imply higher net returns than in table 1. However, tables 1 and 2 are not comparable, because only partial variable costs are used in table 2. It would be erroneous to conclude that it pays to postpone the participation decision. In fact, it probably pays to decide earlier, because least cost practices can be applied to CUA at the outset.

It would be expected that the lower variable costs of spring management and harvesting of wheat would favor nonparticipation, and the example indicates that conclusion for the 30/20 option and for double-cropped wheat. However, for the 30/0 option with single-cropped wheat, participation still pays a slight premium.

Table 1.—Winter wheat returns for fall 1983 participation decision: single and double-crop options[1]

Item	Non-participant	Participant[2] 30/0	Participant[2] 30/20
WHEAT INCOME			
1. Acres harvested	100	70	50
2. Yield per acre (bu)	X 34	X 36	X 37
3. Production (bu)	3,400	2,520	1,850
4. Expected price ($/bu)	X 3.30	X 3.30	X 3.30
5. Market receipts ($)	11,220	8,316	6,105
6. Payment yield (bu)		34	34
7. Acres harvested		X 70	X 50
8. Program prod. (bu)		2,380	1,700
9. Deficiency payment		X 1.15	X 1.15
rate ($/bu)		2,737	1,955
10. Deficiency payments ($)			
11. PIK offer rate (.75 X 34 bu)			25.5
12. PIK acres			X 20
13. PIK (bu)			510
14. Expected price ($/bu)			X 3.30
15. Value of PIK $			1,683
16. Gross income (5 + 10 + 15, $)	11,220	11,053	9,743
SOYBEAN INCOME			
17. Acres harvested	100	70	50
18. Yield per acre (bu)	X 22	X 24	X 25
19. Production (bu)	2,200	1,680	1,250
20. Expected price ($/bu)	X 6.75	X 6.75	X 6.75
21. Gross income ($)	14,850	11,340	8,438
EXPENSES			
22. Wheat acres harvested	100	70	50
23. Variable costs ($/bu)	X 60	X 60	X 60
24. Total ($)	6,000	4,200	3,000
25. Conservation acres		30	50
26. Variable costs ($/bu)		X 20	X 20
27. Total ($)		600	1,000
28. Soybean acres harvested	100	70	50
29. Variable costs ($/bu)	X 95	X 95	X 95
30. Total ($)	9,500	6,650	4,750
NET RETURNS			
31. Single crop (16 − 24 − 27, $)	5,220	6,253	5,743
32. Double crop (31 + 21 − 30, $)	10,570	10,943	9,431

[1]Figures rounded to nearest whole dollar. [2]The 30/0 is the 30-percent acreage reduction program only. The 30/20 is the 30-percent acreage reduction and 20-percent PIK programs.

Table 2.—Winter wheat returns for winter 1983 participation decision: single and double-crop options[1]

Item	Non-participant	Participant[2] 30/0	30/20
WHEAT INCOME			
1. Acres harvested	100	70	50
2. Yield per acre (bu)	X 34	X 36	X 37
3. Production (bu)	3,400	2,520	1,850
4. Expected price ($/bu)	X 3.30	X 3.30	X 3.30
5. Market receipts ($)	11,220	8,316	6,105
6. Payment yield (bu)		34	34
7. Acres harvested		X 70	X 50
8. Program prod. (bu)		2,380	1,700
9. Deficiency payment rate ($/bu)	X 1.15	X 1.15	X 1.15
10. Deficiency payments ($)		2,737	1,955
11. PIK offer rate (.75 X 34 bu)			25.5
12. PIK acres			X 20
13. PIK (bu)			510
14. Expected price ($/bu)			X 3.30
15. Value of PIK $			1,683
16. Gross income (5 + 10 + 15, $)	11,220	11,053	9,743
SOYBEAN INCOME			
17. Acres harvested	100	70	50
18. Yield per acre (bu)	X 22	X 24	X 25
19. Production (bu)	2,200	1,680	1,250
20. Expected price ($/bu)	X 6.75	X 6.75	X 6.75
21. Gross income ($)	14,850	11,340	8,438
EXPENSES			
22. Wheat acres harvested	100	70	50
23. Variable costs ($/bu)	X 20	X 20	X 20
24. Total ($)	2,000	1,400	1,000
25. Conservation acres		30	50
26. Variable costs ($/bu)		X 5	X 5
27. Total ($)		150	250
28. Soybean acres harvested	100	70	50
29. Variable costs ($/bu)	X 95	X 95	X 95
30. Total ($)	9,500	6,650	4,750
NET RETURNS[3]			
31. Single crop (16 − 24 − 27, $)	9,220	9,503	8,493
32. Double crop (31 + 21 − 30, $)	14,570	14,193	12,181

[1]Figures rounded to nearest whole dollar. [2]The 30/0 is the 30-percent acreage reduction program only. The 30/20 is the 30-percent acreage reduction and 20-percent PIK programs. [3]Net returns are above partial variable costs of production, therefore, they are not directly comparable with table 1, which uses total variable costs.

The implication is that even if the December Small Grains report shows large winter wheat plantings, there is an incentive for those growers to re-evaluate their decision in January and February and join the program. Thus, there should be a wider-than-normal spread between planted and harvested winter wheat acreage in 1984, as there was in 1983.

Spring Wheat Growers—Strong Signup Incentive

Table 3 presents a sample budget which is fairly representative of a Hard Red Spring (HRS) wheat grower in the Northern Plains. Data indicate that yields and costs average slightly below those for winter wheat. Conservation acres will likely be planted to oats or barley. Average management costs of CUA are assumed to be slightly below those for winter wheat, reflecting reliance on frost in the fall of 1984 to dispose of the cover crop before maturation, eliminating the need to clip or disk.

Net returns for either program participation option are substantially above those under nonparticipation. This suggests that if growers perceive loan-rate prices, 1984 will be another year of high program participation for spring wheat.

Abundant Intangibles Will Sway Participation Outcome

In addition to the few financial variables analyzed with the sample budgets, many other factors affect final returns under the participation options. Nonparticipation is more attractive to growers who think that their market prices will exceed the loan rate—such as Durum growers—or that their yield would be the same whether they participate or not.

Growers without reserve wheat may choose to stay out of PIK to avoid using their 1984 crop as PIK payment. However, as long as farm prices are expected to average near or below the loan rate, the necessity to harvest for PIK should not be a major disincentive. In fact, the value of PIK in tables 1-3 is the same whether the grower harvests for PIK or receives it from the reserve, because the expected market price is equal to the loan rate.

There are some other factors working against participation. Compared with the 1983 PIK, a major disincentive is the lack of the 7-month bonus payment made on PIK taken from the reserve. Some growers, particularly those in summer fallow and double-crop areas, can plant well beyond their assigned wheat base. Participation for these growers may require too large a reduction from potential plantings to make it profitable. Legislation allowing wheat growers to defer their tax liability on their 1983 PIK bushels to the year in which they are sold will not apply in 1984, another participation disincentive.

On the other hand, participation becomes more attractive as the variable production costs that can be avoided by participation become greater. Program participation also reduces the risk of a low net return, because the deficiency payment and PIK are both based on the program, not the actual, yield. Many growers will have higher program yields in 1984, another participation incentive. Other incentives include the likelihood of better coverage from the Federal Crop Insurance Corporation, fewer hours logged on farm machinery, and more time to devote to other tasks.

Comparing Budgets: 1984 vs 1983

Some indication of how program incentives in 1984 will differ from 1983 can be obtained by reworking the tables using the 1983 program provisions. Consider table 1. Many 1983 program participants could have decided on participating in the 15-percent acreage reduction and 5-percent cash diversion program (15/5/0) prior to planting. However, because PIK was not announced until January 1983, winter wheat growers could not decide on whether to enroll in PIK (15/5/30) until after the crop was in the ground. So to compare 1983 with 1984, the 15/5/0 option was evaluated against nonparticipation using total variable costs of production (assumption used in table 1), but the 15/5/30 option was compared with nonparticipation using partial variable costs (assumption used in table 2). The expected wheat price was set at $3.65 a bushel and soybeans at $6.00. The same costs were used for 1983 as in the 1984 example. Using the derived net returns for the 1983 example, the net returns in table 1 to represent the 1984 ARP, and the net returns in table 2 to represent the 1984 PIK, the following table was obtained:

Net returns: Participation option minus nonparticipation

Acreage reduction (fall decision)	1983—15/5/0	1984—30/0
	Dollars	
Wheat	992	1,033
Wheat/soybeans	972	373
PIK (winter decision)	1983—15/5/30	1984—30/20
	Dollars	
Wheat	203	−727
Wheat/soybeans	−747	−2,389

The results indicate that for single-cropped wheat the acreage reduction and cash diversion program of 1983 provided an expected return that was $992 per 100 acres more than under nonparticipation. This difference represents about the same participation incentive as the acreage reduction program announced for 1984, which shows a return above nonparticipation of $1,033 per 100 acres. However, the budget examples show the 1983 PIK to be much more attractive than the 1984 version. If a haying and grazing credit were added, both 1983 options would be significantly more attractive than 1984. Add in the 7-month bonus payment for reserve PIK, and the 1983 PIK program looks far superior to nonparticipation than in 1984.

For double-cropped wheat, both the 15/5/0 and 15/5/30 options offered higher net returns in 1983 than the analogous options in 1984. The primary reason is that soybean price expectations for the 1984 crop are higher than they were for the 1983 crop.

Table 3.—Spring wheat returns[1]

Item	Nonparticipant	Participant[2] 30/0	Participant[2] 30/20
WHEAT INCOME			
1. Acres harvested	100	70	50
2. Yield per acre (bu)	X 28	X 30	X 31
3. Production (bu)	2,800	2,100	1,550
4. Expected price ($/bu)	X 3.30	X 3.30	X 3.30
5. Market receipts ($)	9,240	6,930	5,115
6. Payment yield (bu)		28	28
7. Acres harvested		X 70	X 50
8. Program prod. (bu)		1,960	1,400
9. Deficiency payment rate ($/bu)		X 1.15	X 1.15
10. Deficiency payments ($)		2,254	1,610
11. PIK offer rate (.75 X 34 bu)			21
12. PIK acres			X 20
13. PIK (bu)			420
14. Expected price ($/bu)			X 3.30
15. Value of PIK $			1,386
16. Gross income (5 + 10 + 15, $)	9,240	9,184	8,111
EXPENSES			
17. Acres harvested	100	70	50
18. Variable costs ($/bu)	X 58	X 58	X 58
19. Total ($)	5,800	4,060	2,900
20. Conservation acres		30	50
21. Variable costs ($/bu)		X 15	X 15
22. Total ($)		450	750
NET RETURN			
23. Income less variable costs (16 − 19 − 22, $)	3,440	4,674	4,461

[1]Figures rounded to nearest whole dollar. [2]The 30/0 is the 30-percent acreage reduction program only. The 30/20 is the 30-percent acreage reduction and 20-percent PIK programs.

Implications for Acreage

Acreage data on the 1983 program are presented in tables 4 and 5. Table 4 shows program enrollment. The spring wheat enrollment percentage exceeded winter wheat because, as indicated by the sample budgets, spring wheat growers could avoid more production expenses than could winter wheat growers. The Corn Belt and the Southeast had the lowest enrollment percentages, reflecting traditional nonparticipation and double cropping, respectively.

Table 5 uses the enrollment data to roughly estimate maximum permitted harvested area assuming there are no program dropouts, that partial PIK enrollees idle 50 percent of their base, and that nonparticipants harvest exactly their base acreage. Actual area harvested exceeded maximum permitted because there were some dropouts in the 15/5/0 option, some PIK participants idled less than 30 percent of their base for PIK payment, and some nonparticipants harvested more than their base acreage.

With the 1984 PIK provisions providing less of an incentive to participate than in 1983, stronger soybean price prospects, no spring haying and grazing option for idled acres, no advance payments, more land available for planting in some areas (such as summer fallow), and a binding contract for participation, the base acreage enrolled in the 1984 program will be below that in 1983. After accounting for dropouts, 45 to 50 million acres of the base acreage of 66 million may have complied in the winter wheat region in 1983. In 1984, this could drop to 20 to 35 million acres, with about a third of that in PIK. Such acreage implies a participation rate of about 30 to 55 percent, compared with an estimated 70 to 75 percent expected compliance in 1983.

In spring wheat areas, the incentive to participate remains strong. In 1983, 18 to 23 million acres of base may have complied with the program, compared with a total base of 25 million acres. In 1984, complying base acreage could drop to 12 to 18 million acres, with two-fifths in PIK. The compliance rate would be 50 to 70 percent, compared with an estimated 85 to 90 percent in 1983.

The following table estimates maximum permitted harvested area using the estimated ranges on program compliance given above for 1984 winter and spring wheat:

	Harvested area million acres
Winter wheat	53 - 59
Spring wheat	18 - 20
Total	71 - 79

Table 4.—Estimated program enrollment, 1983

Region	Total base	Base in 15/5 only	Base in 15/5/30	Whole base farms	Program enrollment
			Million acres		*Percent*
Winter wheat					
Southern Plains	37.2	14.3	16.2	3.0	90
Northern Plains	4.3	1.8	1.9	.4	95
Corn Belt	9.3	3.2	1.8	.7	61
Southeast	7.7	2.3	2.0	.8	67
Pacific Northwest	5.2	2.4	1.7	.5	88
Other areas	2.2	.4	.8	.3	NA
Total	65.9	24.4	24.4	5.7	83
Spring wheat					
Northern Plains	23.6	6.9	14.0	1.8	96
Pacific Northwest	1.1	.4	.4	.1	87
Other areas	.3	.1	.1	—	NA
Total	25.0	7.4	14.5	1.9	95
Total Wheat	90.9	31.8	38.9	7.6	86

— = less than .01

NA = not accurate because of rounding.

Table 5.—Acreage: Harvested and maximum permitted, 1983[1]

Region	Area harvested	Maximum permitted
	Million acres	
Southern Plains	25.7	23.2
Northern Plains	16.4	16.0
Corn Belt	6.2	7.1
Southeast	6.1	5.4
Pacific Northwest	5.0	4.1
Other areas	1.6	1.7
Total	61.0	57.5

[1]Maximum permitted acreage uses enrollment data, assumes that partial PIK enrollees put 30 percent of their base in PIK, and assumes that nonparticipants harvest exactly their base acreage.

How would such a range in harvested acreage affect the current wheat outlook? An early projection of 1984/85 wheat exports, considering foreign production growth of wheat in recent years, foreign economic growth, and lower foreign currency prices of U.S. wheat, might be 1.5 billion bushels. With another summer of strong wheat feed use, domestic use could be 1.05 billion bushels. This total use of 2.55 billion bushels could be produced on 71 million harvested acres—the high-participation end of the estimated range—assuming a trend yield of 36 bushels an acre. This production and use would leave stocks unchanged at an excessive 1.5 billion bushels.

This prospect is a factor in bills introduced in Congress this fall to amend the announced 1984 wheat program to increase participation incentives. The U.S. House of Representatives passed legislation on November 16 that would increase incentives by adding a cash diversion, raising the PIK offer rate to 85 percent of program yield, requiring advance diversion and deficiency payments, relaxing summer fallow rules, and allowing haying and grazing during the 6 principal growing months. The bill also provides for a lower target price, a participation disincentive. Reworking tables 1-3 using these provisions indicates stronger incentives to participate in both the 30-percent acreage reduction and PIK programs. Another potential factor, still on the horizon, is the recently announced conclusion of the General Accounting Office that it is a violation to exclude PIK from the $50,000 per person limit on program payments. The House has asked for a court ruling to determine whether PIK should be subject to the payment limit.

Table 1.--Wheat: supply, disappearance, area, and prices, marketing years 1980-83*

Item	1980/81	1981/82	1982/83 (prel.)	1983/84 (proj.)
		Million bushels		
Supply				
Beginning stocks, June 1	902	989	1,164	1,543
Production	2,374	2,799	2,809	2,408 ± 30
Imports 1/	3	3	7	3
Total	3,279	3,791	3,980	3,954 ± 30
Domestic disappearance				
Food	611	602	616	625 ± 5
Seed	114	112	97	105 ± 5
Feed 2/	51	142	215	350 ± 70
Total	776	856	928	1,080 ± 75
Exports 1/	1,514	1,771	1,509	1,400 ± 125
Total disappearance	2,290	2,627	2,437	2,480 ± 150
Ending stocks, May 31	989	1,164	1,543	1,474 ± 150
		Million acres		
Area				
Planted	80.6	88.9	87.3	76.6
Harvested	71.0	81.0	78.8	61.0
Set aside and diverted	--	--	5.8	29.8
National Program acreage	75.0	84.5	--	--
		Bushels per acre		
Yield per harvested acre	33.4	34.5	35.6	39.5
		Dollars per bushel		
Prices				
Received by farmers	3.91	3.65	3.53	3.50-3.70
Loan rate	3.00	3.20	3.55	3.65
Target rate	3.63	3.81	4.05	4.30

1/ Imports and exports include flour and other products expressed in wheat equivalent. 2/ Residual, approximates feed use and includes negligible quantities used for alcoholic beverages.

* Totals may not add due to rounding.

Table 2.--Wheat classes: marketing year supply and disappearance 1/

Year beginning June 1	Supply			Disappearance			Ending stocks May 31
	Beginning stocks	Production	Total 2/	Domestic use	Exports	Total	
	Million bushels						
1980/81:							
Hard Winter	440	1,181	1,621	379	701	1,080	541
Hard Spring	285	312	598	153	188	341	257
Soft Red	40	435	475	138	299	437	38
White	76	338	414	54	267	321	93
Durum	61	108	171	52	59	111	60
All classes	902	2,374	3,279	776	1,514	2,290	989
1981/82:							
Hard Winter	541	1,117	1,658	365	754	1,119	539
Hard Spring	257	468	726	173	205	378	348
Soft Red	38	676	714	194	460	654	60
White	93	352	445	66	270	336	109
Durum	60	186	248	58	82	140	108
All classes	989	2,799	3,791	856	1,771	2,627	1,164
1982/83:							
Hard Winter	539	1,255	1,794	358	679	1,037	757
Hard Spring	348	500	852	186	239	425	427
Soft Red	60	610	670	271	325	596	74
White	109	296	405	55	207	262	143
Durum	108	148	259	58	59	117	142
All classes	1,164	2,809	3,980	928	1,509	2,437	1,543
1983/84: 3/							
Hard Winter	757	1,188	1,945	483	660	1,143	802
Hard Spring	427	313	741	186	225	411	330
Soft Red	74	508	582	293	245	538	44
White	143	327	470	69	200	269	201
Durum	142	72	216	49	70	119	97
All classes	1,543	2,408	3,954	1,080	1,400	2,480	1,474

1/Data, except production, are approximations. Imports and exports include flour and products in wheat equivalent. 2/Total supply includes imports. 3/Projected.

Table 3.--Wheat: marketing year supply and disappearance, specified periods, 1980-83*

Year and period	Supply				Ending stocks		
	Beginning stocks	Production	Imports 1/	Total	Gov't owned	Privately owned 2/	Total
	- - -Million bushels- - -						
1980/81							
June-Sept.	902.0	2,374.3	0.8	3,277.1	202.1	2,270.2	2,472.3
Oct.-Dec.	2,472.3	---	0.6	2,472.9	203.5	1,699.7	1,903.2
Jan.-Mar.	1,903.2	---	0.7	1,903.9	203.2	1,125.4	1,328.6
Apr.-May	1,328.6	---	0.4	1,329.1	199.7	789.1	988.8
Mkt. year	902.0	2,374.3	2.5	3,278.8	199.7	789.1	988.8
1981/82							
June-Sept.	988.8	2,798.7	0.7	3,788.2	191.3	2,543.9	2,735.2
Oct.-Dec.	2,735.2	---	0.8	2,736.0	188.7	1,989.3	2,178.0
Jan.-Mar.	2,178.0	---	0.8	2,178.8	189.1	1,368.0	1,557.1
Apr.-May	1,557.1	---	0.5	1,557.6	190.3	973.6	1,163.9
Mkt. year	988.8	2,798.7	2.8	3,790.3	190.3	973.6	1,163.9
1982/83							
June-Sept.	1,163.9	2,808.7	1.2	3,973.8	190.6	2,796.5	2,987.1
Oct.-Dec.	2,987.1	---	3.0	2,990.1	185.4	2,335.1	2,520.5
Jan.-Mar.	2,520.5	---	2.7	2,523.2	185.2	1,691.8	1,877.0
Apr.-May	1,877.0	---	0.7	1,877.7	192.0	1,351.2	1,543.2
Mkt. year	1,163.9	2,808.7	7.6	3,980.2	192.0	1,351.2	1,543.2
1983/84 4/							
June-Sept.	1,543.2	2,407.6	1.2	3,952.0	*365.0	2,587.7	2,952.7
Oct.-Dec.							
Jan.-Mar.							
Apr.-May							
Mkt. year							

Year and period	Disappearance					
	Domestic use					
	Food	Seed	Feed 3/	Total	Exports 1/	Total disappearance
	- - -Million bushels- - -					
1980/81						
June-Sept.	197.2	38.0	51.2	286.4	518.4	804.8
Oct.-Dec.	167.1	44.0	-12.8	198.3	371.4	569.7
Jan.-Mar.	150.1	1.0	23.7	174.8	400.4	575.2
Apr.-May	96.1	31.0	-10.4	116.7	223.6	340.3
Mkt. year	610.5	114.0	51.7	776.2	1,513.8	2,290.0
1981/82						
June-Sept.	202.5	37.0	191.7	431.2	621.8	1,053.0
Oct.-Dec.	159.0	46.0	-74.4	130.6	427.4	558.0
Jan.-Mar.	151.7	1.0	28.0	180.7	441.0	621.7
Apr.-May	89.2	28.0	-4.0	113.2	280.5	393.7
Mkt. year	602.4	112.0	141.3	855.7	1,770.7	2,626.4
1982/83						
June-Sept.	206.4	37.0	197.7	441.1	545.6	986.7
Oct.-Dec.	161.8	40.0	-24.8	177.0	292.6	469.6
Jan.-Mar.	151.4	1.0	51.7	204.1	442.1	646.2
Apr.-May	96.8	19.0	-9.6	106.2	228.3	334.5
Mkt. year	616.4	97.0	215.0	928.4	1,508.6	2,437.0
1983/84 4/						
June-Sept.	207.8	37.0	272.0	516.8	482.5	999.3
Oct.-Dec.						
Jan.-Mar.						
Apr.-May						
Mkt. year						

1/ Imports and exports include flour and other products expressed in wheat equivalent. 2/ Includes outstanding and reserve loans. 3/ Residual; approximates feed use and includes negligible quantities used for alcoholic beverages. 4/ Preliminary. *As of August 31, 1983.

* Totals may not add due to rounding.

Table 4.--Wheat, flour and wheat products, United States exports by months, 1981-83*

Year and month	Wheat	Flour 1/ (Grain equivalent)	Products 2/ (Grain equivalent)	Monthly total	Cumulative total
			1,000 bushels		
1981/82					
June	124,521	5,794	1,827	132,142	132,142
July	138,168	2,779	1,150	142,097	274,239
August	145,428	3/ 3,438	1,009	3/ 149,875	424,114
September	194,148	2,496	1,037	197,681	621,795
October	156,993	3/ 668	1,171	3/ 158,832	780,627
November	127,495	3/ 411	1,406	3/ 129,312	909,939
December	137,757	3/ 902	572	3/ 139,231	1,049,170
January	124,163	1,767	1,211	127,141	1,176,311
February	138,719	8,068	1,875	148,662	1,324,973
March	159,078	5,775	351	165,204	1,490,177
April	148,181	3/ 6,955	2,246	3/ 157,382	1,647,559
May	116,496	5,983	692	123,171	1,770,730
Mkt. year	1,711,147	45,036	14,547	1,770,730	
1982/83					
June	156,914	3/ 4,577	3/ 971	162,462	162,462
July	117,914	3/ 1,364	3/ 465	119,743	282,205
August	124,336	3/ 3,488	1,073	128,897	411,102
September	130,992	3/ 2,508	984	134,485	545,587
October	98,520	3/ 3,904	3/ 529	3/ 102,952	648,539
November	94,638	3/ 2,483	3/ 2,604	3/ 99,726	748,265
December	88,457	3/ 999	3/ 472	3/ 89,928	838,193
January	3/ 143,141	3/ 3,998	3/ 796	3/ 147,935	986,127
February	146,594	3/ 8,865	3/ 492	3/ 155,950	1,142,078
March	131,134	3/ 6,532	3/ 586	3/ 138,252	1,280,330
April	112,451	3/ 10,530	630	3/ 123,611	1,403,941
May	96,235	3/ 7,521	3/ 935	3/ 104,691	1,508,632
Mkt. year	1,441,326	56,769	10,537	1,508,632	
1983/84					
June	3/ 113,506	3/ 9,611	3/ 633	3/ 123,750	123,750
July	116,701	3/ 8,198	3/ 1,075	3/ 125,974	249,724
August	87,823	7,814	1,378	97,015	346,739
September	119,242	10,479	6,044	135,765	482,504
October					
November					
December					
January					
February					
March					
April					
May					
Mkt. year					

1/ Includes meal and groats. 2/ Includes macaroni and bulgar. 3/ Revised by Census.

* Totals may not add due to rounding.

Source: Bureau of the Census.

Table 5.--Wheat: price support loan status on specified dates, 1976-83 crops

Crop of	Total loans	Put in reserve	Repaid Loans	Repaid Reserve	Delivered to CCC	Outstanding Loans	Outstanding Reserve
			Million bushels				
			As of June 1, 1983				
1976	498.8	216.1	234.7	208.7	48.0	--	7.4
1977	590.8	195.0	393.6	177.7	2.2	--	17.3
1978	255.1	23.9	231.2	9.3	--	--	14.6
1979	180.5	39.7	140.8	15.4	--	--	24.3
1980	329.4	205.1	123.2	7.0	--	1.1	198.1
1981	445.8	239.8	174.3	4.1	16.1	15.6	235.7
1982	640.9	573.1	9.9	10.0	9.3	48.6	563.1
Total	***	***	***	***	1/192.0	65.3	1,060.5
			As of October 1, 1983				
1976	498.8	216.1	234.7	213.6	48.0	--	2.5
1977	590.8	195.0	393.6	186.9	2.2	--	8.1
1978	255.1	23.9	231.2	10.8	--	--	13.1
1979	180.5	39.8	140.7	18.6	--	--	21.2
1980	329.4	205.3	124.1	40.4	--	--	164.9
1981	445.8	241.3	189.5	61.0	7.3	7.7	180.3
1982	640.9	578.6	39.4	153.5	--	22.9	425.1
1983	357.5	--	77.8	--		279.7	
Total	***	***	***	***	1/* 365.0	310.3	815.2
			As of January 1, 1983				
1976	498.8	216.1	234.7	159.7	48.0	--	56.4
1977	590.8	195.0	393.6	140.3	2.2	--	54.7
1978	255.1	24.0	231.1	4.7	--	--	19.3
1979	180.5	40.0	140.5	5.9	--	--	34.1
1980	329.4	206.2	123.0	3.8	--	0.2	202.4
1981	445.8	229.4	177.2	0.6	10.9	28.3	228.8
1982	501.1	422.4	4.5	0.3	--	74.2	422.1
Total	***	***	***	***	1/185.4	102.7	1,017.8
			As of April 1, 1983				
1976	498.8	216.1	234.7	194.8	48.0	--	21.3
1977	590.8	195.0	393.6	159.4	2.2	--	35.6
1978	255.1	23.9	231.2	7.4	--	--	16.5
1979	180.5	39.7	140.8	10.7	--	--	29.0
1980	329.4	205.2	123.1	4.1	--	1.1	201.1
1981	445.8	237.7	176.1	0.9	13.1	18.9	236.8
1982	629.4	555.3	12.2	0.7	0.1	61.8	554.6
Total	***	***	***	***	1/ 185.2	81.8	1,094.9

1/Includes outstanding CCC-owned stocks from loan forfeitures and open market purchases in March 1980. *As of August 31, 1983.

Source: Agricultural Stabilization and Conservation Service loan activity reports.

Table 6.--White pan bread: estimated price and marketing spreads of ingredients per 1-pound loaf and per cwt of flour, April-June 1982-1983*

Item 1/	April-June 1982		April-June 1983	
	Value per loaf	Value per cwt of flour	Value per loaf	Value per cwt of flour
	Cents	Dollars	Cents	Dollars
Retail price (BLS)	52.67	84.69	54.07	86.93
Price spreads				
Wholesale-to-retail 2/	8.65	13.91	8.29	13.32
Baking 3/	34.54	55.54	36.25	58.27
Flour milling	.99	1.58	1.03	1.65
Other spreads				
Wheat, farm-to-flour mill	.93	1.49	.99	1.60
Other farm ingredients 4/	.74	1.18	.76	1.22
Flour, flour mill-to-baker	.60	.96	.54	.87
Nonfarm ingredients 5/	1.05	1.70	1.04	1.68
Total farm-retail price spread	47.50	76.37	48.90	78.63
Farm value of ingredients				
Wheat	4.48	7.20	4.44	7.14
Other farm ingredients	.69	1.12	.72	1.16
Total farm value	5.17	8.31	5.16	8.30
Cost of farm ingredients				
Flour				
F.o.b. bakery	6.99	11.24	7.00	11.26
F.o.b. flour mill	6.39	10.28	6.46	10.39
Wheat 6/				
F.o.b. flour mill	5.40	8.69	5.44	8.74
Farm value	4.48	7.20	4.44	7.14
Other farm ingredients				
F.o.b. bakery	1.43	2.30	1.48	2.38
Farm value	.69	1.12	.72	1.16

	Dollars per cwt	
Prices of flour and millfeeds		
Flour, f.o.b. bakery	11.24	11.26
Flour, f.o.b. flour mill	10.28	10.39
Millfeeds, f.o.b. flour mill	4.45	4.54
	Dollars per bushel	
Prices of wheat		
Wheat, f.o.b. flour mill	4.39	4.43
Farm value	3.63	3.62

1/ Price spreads may not add because of independent rounding. 2/ Difference between retail and wholesale price of bread. 3/ Difference between wholesale price and cost of bread ingredients, f.o.b. bakery. 4/ Includes processing, transportation, and merchandising for lard, soybean oil, HFCS, corn sirup, and soy-whey blend. Difference between estimated cost to baker and estimated farm value. 5/ Estimated cost to baker of yeast, yeast food, salt, and other nonfarm ingredients. 6/ Price adjusted for value of millfeeds.

* Spreads are developed by L.D. Schnake (economist) and Janee Roche, ERS, USDA, at the U.S. Grain Marketing Research Laboratory, Manhattan, Kansas 66502, (913) 539-9141.

Table 7.--Wheat and flour: price relationships at milling centers, annual and by periods, 1979-83

Year and period	At Kansas City					At Minneapolis				
	Cost of wheat to produce 100 lb. of flour 1/	Wholesale price of				Cost of wheat to produce 100 lb. of flour 1/	Wholesale price of			
		Bakery flour per 100 lb. 2/	Byprod-ucts obtained 100 lb. flour 3/	Total products			Bakery flour per 100 lb. 2/	Byprod-ucts obtained 100 lb. flour 3/	Total products	
				Actual	Over cost of wheat				Actual	Over cost of wheat
	Dollars									
1979/80										
June-Sept.	9.87	9.91	1.70	11.61	1.74	9.88	10.22	1.61	11.83	1.95
Oct.-Dec.	10.50	10.39	1.85	12.24	1.74	9.99	10.57	1.63	12.20	2.21
Jan.-Mar.	9.79	10.02	1.77	11.79	2.00	9.46	10.20	1.45	11.65	2.19
Apr.-May	9.24	9.75	1.50	11.25	2.01	9.61	10.04	1.36	11.40	1.79
Mkt. year	9.85	10.02	1.70	11.72	1.87	9.73	10.26	1.51	11.77	2.04
1980/81										
June-Sept.	9.81	10.11	1.81	11.92	2.11	10.46	10.83	1.63	12.46	2.00
Oct.-Dec.	10.80	10.54	2.38	12.92	2.12	11.29	11.04	2.05	13.09	1.80
Jan.-Mar.	10.31	10.44	1.95	12.39	2.08	10.98	11.05	1.67	12.72	1.74
Apr.-May	10.27	10.42	1.81	12.23	1.96	11.08	11.09	1.76	12.85	1.77
Mkt. year	10.30	10.38	1.99	12.37	2.07	10.95	11.00	1.78	12.78	1.83
1981/82										
June-Sept.	9.69	10.33	1.55	11.88	2.19	10.08	10.82	1.49	12.31	2.23
Oct.-Dec.	9.93	10.13	1.79	11.92	1.99	9.84	10.52	1.43	11.95	2.11
Jan.-Mar.	9.85	10.66	1.41	12.07	2.22	9.63	10.82	1.23	12.05	2.42
Apr.-May	9.76	10.38	1.52	11.90	2.14	9.64	10.54	1.48	12.02	2.38
Mkt. year	9.81	10.37	1.57	11.94	2.13	9.80	10.67	1.41	12.08	2.28
1982/83										
June-Sept.	9.24	10.14	1.39	11.53	2.29	9.31	10.43	1.25	11.68	2.37
Oct.-Dec.	9.22	10.06	1.58	11.64	2.42	9.22	10.43	1.29	11.72	2.50
Jan.-Mar.	9.60	10.40	1.47	11.87	2.27	9.15	10.41	1.10	11.51	2.36
Apr.-May	9.77	10.26	1.65	11.91	2.14	10.11	10.88	1.40	12.28	2.17
Mkt. year	9.46	10.22	1.52	11.74	2.28	9.45	10.54	1.26	11.80	2.35
1983/84 4/										
June-Sept.	9.54	10.36	1.72	12.08	2.54	9.97	11.17	1.47	12.64	2.67
Oct.-Dec.										
Jan.-Mar.										
Apr.-May										
Mkt. year										

1/Based on 73-percent extraction rate, cost of 2.28 bushels: At Kansas City, No. 1 Hard Winter, 13-percent protein, and at Minneapolis, simple average of No. 1 Dark Northern Spring, 13-and 15-percent protein. 2/Quoted as 95-percent patent at Kansas City and standard patent at Minneapolis, bulk basis. 3/Assumed 50-50 millfeed distribution between bran and shorts or middlings, bulk basis. 4/Preliminary.

Source: Compiled from reports of Agricultural Marketing Service and Department of Labor.

Table 8.--Wheat: farm price for leading classes and major feed grains in region, 1980-83 1/

Commodity and year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average	Loan rate
							All prices for 60 pounds							
							Central and So. Plains (Hard Winter) 2/							
Wheat:														
1980/81	3.49	3.63	3.75	3.86	4.10	4.19	4.01	4.08	3.99	3.83	3.88	3.75	3.88	2.94
1981/82	3.77	3.72	3.68	3.69	3.76	3.87	3.82	3.78	3.74	3.71	3.72	3.66	3.74	3.13
1982/83	3.49	3.37	3.34	3.38	3.36	3.43	3.49	3.51	3.51	3.61	3.74	3.72	3.50	3.36
1983/84	3.50	3.34	3.54	3.59										3.56
Sorghum:														
1980/81	2.58	2.94	3.06	3.18	3.31	3.33	3.34	3.33	3.28	3.14	3.18	3.12	3.15	2.27
1981/82	3.03	2.96	2.65	2.37	2.34	2.36	2.39	2.44	2.42	2.43	2.47	2.61	2.54	2.42
1982/83	2.60	2.57	2.49	2.44	2.26	2.34	2.41	2.48	2.68	2.84	2.96	3.02	2.59	2.57
1983/84	3.10	3.04	3.14	3.14										2.68
							Cornbelt (Soft Red Winter) 3/							
Wheat:														
1980/81	3.58	3.82	4.02	4.19	4.41	4.59	4.50	4.50	4.28	4.03	4.00	3.59	4.13	3.00
1981/82	3.35	3.46	3.36	3.45	3.56	3.68	3.70	3.71	3.40	3.36	3.42	3.23	3.47	3.20
1982/83	3.18	3.08	2.98	2.89	2.75	3.02	3.13	3.18	3.20	3.30	3.29	3.30	3.11	3.56
1983/84	3.25	3.25	3.54	3.49										3.66
Corn:														
1980/81	2.76	3.06	3.28	3.36	3.28	3.46	3.53	3.54	3.58	3.58	3.57	3.56	3.38	2.46
1981/82	3.47	3.44	3.11	2.76	2.64	2.52	2.54	2.74	2.63	2.66	2.77	2.86	2.85	2.62
1982/83	2.82	2.76	2.57	2.30	2.09	2.29	2.48	2.57	2.77	2.96	3.25	3.34	2.68	2.78
1983/84	3.39	3.43	3.81	3.68										2.87
							Northern Plains (Spring and Durum) 4/							
Other spring														
1980/81	3.82	4.04	3.95	3.96	4.15	4.24	4.18	4.23	4.19	4.15	4.25	4.24	4.12	3.02
1981/82	4.12	3.93	3.70	3.62	3.66	3.74	3.63	3.69	3.67	3.61	3.73	3.69	3.73	3.21
1982/83	3.62	3.59	3.46	3.45	3.44	3.51	3.47	3.45	3.41	3.61	3.82	3.86	3.56	3.57
1983/84	3.80	3.80	3.77	3.69										3.68
Durum:														
1980/81	N	O	T		A	V	A	I	L	A	B	L	E	3.02
1981/82	4.52	3.91	3.52	3.41	3.51	3.55	3.47	3.60	3.67	3.52	3.54	3.52	3.64	3.21
1982/83	3.50	3.36	3.10	3.09	3.19	3.25	3.16	3.40	3.22	3.47	3.82	4.00	3.38	3.57
1983/84	4.01	3.96	4.11	4.07										3.68
							Pacific Northwest (White) 5/							
Wheat:														
1980/81	3.53	3.71	3.67	3.80	4.03	4.12	4.08	4.05	4.06	4.11	4.02	4.08	3.94	3.08
1981/82	3.97	3.69	3.78	3.80	3.94	3.96	3.98	3.91	3.75	3.68	3.72	3.71	3.82	3.29
1982/83	3.71	3.62	3.74	3.76	3.86	3.91	3.98	4.07	4.15	4.18	4.13	4.04	3.93	3.65
1983/84	3.74	3.61	3.68	3.70										3.75
Barley:														
1980/81	3.16	3.34	3.32	3.35	3.70	3.80	3.99	4.07	4.15	4.07	3.95	3.99	3.74	2.40
1981/82	3.72	3.39	3.19	3.10	3.08	3.34	3.20	3.24	3.21	3.39	3.41	3.45	3.31	2.55
1982/83	3.25	3.02	3.11	2.73	2.58	2.70	2.94	2.83	2.88	2.82	3.01	3.10	2.91	2.71
1983/84	3.06	2.97	3.20	3.34										2.81
							U.S. average							
Wheat:														
1980/81	3.69	3.81	3.94	3.99	4.19	4.32	4.22	4.21	4.17	4.09	4.07	3.95	6/3.91	3.00
1981/82	3.70	3.62	3.62	3.65	3.77	3.85	3.80	3.78	3.70	3.67	3.68	3.64	6/3.65	3.20
1982/83	3.39	3.26	3.34	3.38	3.43	3.48	3.51	3.57	3.57	3.66	3.77	3.77	6/3.53	3.55
1983/84	3.51	3.34	3.61	3.66										3.65

1/To adjust price to relative feed value multiply: corn 1.00; wheat 1.05; barley .90; sorghum .95; reported in Consumption of Feed by Livestock, Report No. 79, ERS, USDA. 2/Kansas, Nebraska, Texas, Oklahoma, and Colorado. 3/Ohio, Indiana, Illinois, and Missouri. 4/North Dakota, South Dakota, and Minnesota. 5/Washington, Oregon, and Idaho. 6/Season average price includes allowance for unredeemed loans and purchases.

Table 9.--Wheat: cash prices for leading classes at major markets, 1980-83

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per bushel							
						Kansas City, No. 1 Hard Red Winter (ordinary protein)							
1980/81	4.07	4.21	4.31	4.45	4.70	4.89	4.54	4.60	4.47	4.35	4.48	4.36	4.45
1981/82	4.24	4.25	4.14	4.19	4.31	4.46	4.35	4.33	4.26	4.25	4.28	4.22	4.27
1982/83	4.06	3.74	3.70	3.75	3.61	3.86	3.98	4.00	4.08	4.18	4.21	4.05	3.94
1983/84	3.92	3.71	3.88	3.90									
						13% protein							
1980/81	4.12	4.25	4.34	4.49	4.70	4.91	4.60	4.67	4.50	4.40	4.57	4.44	4.50
1981/82	4.36	4.26	4.16	4.22	4.29	4.44	4.33	4.35	4.32	4.29	4.32	4.24	4.30
1982/83	4.15	4.12	4.00	3.94	3.80	4.09	4.24	4.19	4.17	4.27	4.35	4.22	4.13
1983/84	4.22	4.15	4.16	4.21									
						Chicago, No. 2 Soft Red Winter							
1980/81	3.96	4.17	4.21	4.38	4.70	4.92	4.54	4.57	4.34	4.15	4.18	3.80	4.33
1981/82	3.60	3.70	3.70	3.87	3.97	4.08	3.86	3.77	3.57	3.59	3.70	3.43	3.74
1982/83	3.31	3.36	3.35	3.18	2.98	3.33	3.23	3.32	3.40	3.36	3.51	3.55	3.32
1983/84	3.53	3.59	3.71	3.62									
						St. Louis, No. 2 Soft Red Winter							
1980/81	3.73	4.10	4.19	4.42	4.78	4.96	4.78	4.80	4.57	4.32	4.36	3.67	4.39
1981/82	3.41	3.54	3.56	3.67	3.74	4.05	3.90	3.76	3.60	3.61	3.72	3.31	3.66
1982/83	3.25	3.27	3.14	3.06	3.06	3.38	3.28	3.33	3.41	3.43	3.58	3.61	3.32
1983/84	3.46	3.51	3.79	3.70									
						Toledo, No. 2 Soft Red Winter							
1980/81	3.84	4.14	4.16	4.38	4.82	5.02	4.65	4.70	4.47	4.16	4.16	3.76	4.36
1981/82	3.55	3.63	3.71	3.83	3.98	4.08	3.85	3.71	3.47	3.46	3.63	3.45	3.70
1982/83	3.35	3.36	3.28	3.09	2.84	3.19	3.23	3.28	3.32	3.29	3.45	3.47	3.26
1983/84	3.42	3.48	3.69	3.54									
						Toledo, No. 2 Soft White							
1980/81	3.71	4.05	4.15	4.31	--	--	4.44	4.40	4.21	3.98	3.98	3.62	4.08
1981/82	3.43	3.62	3.77	3.91	3.99	4.10	3.82	3.68	3.49	3.47	3.61	3.45	3.70
1982/83	3.35	3.49	3.42	3.22	2.92	3.22	3.29	3.25	3.39	3.43	3.49	3.48	3.33
1983/84	3.42	3.51	3.71	3.56									
						Portland, No. 1 Soft White							
1980/81	3.92	4.15	4.06	4.23	4.48	4.68	4.40	4.52	4.52	4.41	4.51	4.41	4.36
1981/82	4.26	4.27	4.25	4.21	4.38	4.42	4.00	4.12	4.09	4.02	4.14	4.24	4.20
1982/83	4.18	4.13	4.16	4.29	4.29	4.44	4.45	4.52	4.59	4.68	4.62	4.35	4.39
1983/84	4.15	4.08	4.06	4.12									
						Minneapolis, No. 1 Dark No. Spring (ordinary protein)							
1980/81	4.19	4.54	4.22	4.17	4.62	4.78	4.62	4.65	4.53	4.32	4.41	4.44	4.46
1981/82	4.29	4.18	4.03	4.07	4.22	4.29	4.15	4.21	4.17	4.10	4.21	4.16	4.17
1982/83	4.08	4.08	3.78	3.79	3.78	3.85	3.76	3.80	3.82	4.01	4.34	4.25	3.94
1983/84	4.15	4.07	4.21	4.30									
						14% protein							
1980/81	4.33	4.69	4.55	4.56	4.82	4.95	4.77	4.81	4.78	4.67	4.80	4.77	4.71
1981/82	4.56	4.50	4.25	4.23	4.29	4.38	4.22	4.28	4.21	4.16	4.25	4.20	4.29
1982/83	4.13	4.16	3.96	4.02	4.00	4.08	3.96	3.93	3.92	4.08	4.40	4.40	4.09
1983/84	4.39	4.38	4.34	4.33									
						Hard Amber Durum, No. 1 (medium)							
1980/81	5.79	7.12	7.19	7.26	7.34	7.22	6.90	7.07	7.02	6.66	6.10	6.04	6.81
1981/82	4.86	4.91	4.75	4.56	4.60	4.58	4.51	4.59	4.57	4.45	4.45	4.49	4.61
1982/83	4.38	4.26	4.07	4.02	4.11	4.17	4.07	4.06	4.12	4.28	4.54	4.90	4.25
1983/84	4.76	4.74	5.04	5.10									

Source: Grain Market News, Agricultural Marketing Service.

Table 10.--Wheat: export prices by months, at selected ports, 1980-83

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per metric ton							
						Gulf: No. 1 Hard Red Winter, ordinary protein							
1980/81	158	169	171	180	188	195	182	187	182	175	180	172	178
1981/82	169	168	170	171	169	179	175	173	171	169	170	168	171
1982/83	156	152	153	153	147	155	160	165	165	166	167	160	158
1983/84	152	148	152	157									
						Gulf: No. 1 Soft Red Winter							
1980/81	146	163	165	176	187	193	180	187	176	168	172	143	171
1981/82	133	136	140	147	150	157	151	148	142	144	149	128	144
1982/83	126	128	122	119	113	129	128	131	133	133	137	136	128
1983/84	132	135	145	142									
						Portland: No. 2 Western White							
1980/81	147	158	157	162	172	180	170	174	173	166	166	165	166
1981/82	159	159	161	161	165	166	152	155	152	152	155	157	158
1982/83	156	153	158	162	161	167	168	169	172	174	172	163	165
1983/84	155	152	156	157									
						Duluth: No. 2 Northern Spring, 14% protein							
1980/81	158	174	168	170	177	180	1/	1/	1/	1/	176	175	172
1981/82	170	164	159	156	158	161	1/	1/	1/	1/	164	154	161
1982/83	151	152	146	148	147	149	1/	1/	1/	1/	161	159	152
1983/84	160	159	159	158									

1/No price quotes available.

Source: Grain Market News, Agricultural Marketing Service.

Table 11.--Wheat: Rotterdam, c.i.f., quotations by months, 1980-83 1/

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per metric ton							
						United States No. 2 Hard Winter, 13.5%							
1980/81	203	204	209	214	224	233	235	233	225	212	211	206	217
1981/82	203	204	201	200	200	212	206	200	199	198	206	204	203
1982/83	176	176	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	176
1983/84	2/	2/	2/	2/									
						United States Dark Northern Spring, 14%							
1980/81	197	194	189	212	216	226	235	245	240	209	210	207	215
1981/82	197	194	189	190	193	196	190	204	204	195	190	184	194
1982/83	178	178	174	174	171	177	183	185	178	172	186	186	178
1983/84	184	182	187	187									

1/Hamburg Mercantile Exchange prices for Rotterdam. 2/No price quotes available.

Source: World Grain Situation, Foreign Agricultural Service.

Table 12.--Wheat and wheat flour: world trade, production, stocks, and utilization, July-June 1980-83

Country or region	1980/81	1981/82	1982/83	1983/84 as of Nov. 15
		Million metric tons		
Exports:				
Canada	17.0	17.6	21.2	21.5
Australia	10.6	11.0	8.1	11.5
Argentina	3.9	4.3	7.4	9.0
EC-10	14.7	15.5	15.5	15.5
USSR	0.5	0.5	0.5	0.5
All others	5.5	3.6	5.4	4.6
Total non-U.S.	52.2	52.5	58.1	62.6
USA 1/	41.9	48.8	39.9	38.1
World total	94.1	101.2	98.1	100.7
Imports:				
EC-10	4.5	4.7	3.6	4.5
USSR	16.0	19.5	20.2	18.0
Japan	5.8	5.6	5.8	5.6
E. Europe	5.9	6.3	4.1	3.9
China	13.8	13.2	13.0	12.0
All others	48.1	52.0	51.4	56.7
World total	94.1	101.2	98.1	100.7
Production: 2/				
Canada	19.2	24.8	26.8	26.6
Australia	10.9	16.4	8.9	19.0
Argentina	7.8	8.3	14.5	12.5
EC-10	55.1	54.4	59.6	58.2
USSR 3/	98.2	80.0	86.0	80.0
E. Europe	34.5	30.5	34.7	33.8
China	55.2	59.6	68.4	78.0
India	31.8	36.3	37.8	42.5
All other foreign	64.9	62.7	66.5	65.2
USA	64.6	76.2	76.4	65.5
World total	442.1	449.2	479.7	481.4
Utilization: 4/				
USA	21.1	23.3	25.3	29.4
USSR 3/	116.7	99.0	105.7	93.5
China	69.0	72.8	81.4	90.0
All other foreign	237.2	246.7	255.6	263.4
World total	444.0	441.8	468.0	476.3
Stocks, ending: 5/	79.0	86.4	98.1	103.1

1/Includes transshipments through Canadian ports; excludes products other than flour. 2/Production data include all harvests occurring within the July-June year shown, except that small grain crops from the early harvesting Northern Hemisphere areas are moved forward; i.e., the May 1980 harvests in areas such as India, North Africa, and Southern United States are actually included in 1980/81 accounting period, which begins July 1, 1980. 3/"Bunker weight" basis: not discounted for excess moisture and foreign material. 4/Utilization data are based on an aggregate of differing local marketing years. For countries for which stock data are not available (excluding the USSR), utilization estimates represent apparent utilization, i.e., they are inclusive of annual stock level adjustments. 5/Stocks data are based on an aggregate of differing local marketing years and should not be construed as representing world stock levels at a fixed point in time. Stocks data are not available for all countries and exclude those such as China and part of Eastern Europe; the world stock levels have been adjusted for estimated year-to-year changes in USSR grain stocks, but do not purport to include the entire absolute level of USSR stocks.

Source: Foreign Agricultural Service. World Grain Situation.

Table 13.--Rye: supply, disappearance, area, and prices, marketing years 1979-83*

Item	1979/80	1980/81	1981/82	1982/83 (prel.)	1983/84 (proj.)
			Million bushels		
Supply					
Beginning stocks, June 1	9.0	12.2	4.1	3.1	6.4
Production	22.4	16.5	18.8	20.8	25.7
Imports	1/	1/	0.4	3.0	0.5
Total	31.4	28.7	23.4	26.9	32.6
Domestic disappearance					
Food	3.5	3.5	3.5	3.3	3.5
Industry	2.1	2.1	2.2	2.3	2.1
Seed	4.0	4.2	4.2	4.2	4.2
Feed 2/	7.1	7.3	8.9	10.5	15.0
Total	16.7	17.1	18.8	20.3	24.8
Exports	2.4	7.5	1.5	0.2	0.5
Total disappearance	19.2	24.6	20.3	20.5	25.3
Ending stocks, May 31	12.2	4.1	3.1	6.4	7.3
			Million acres		
Area					
Planted	2.9	2.5	2.6	2.6	2.8
Harvested	0.9	0.7	0.7	0.7	0.9
			Bushels per acre		
Yield per harvested acre	25.8	24.4	26.7	29.1	30.0
			Dollars per bushel		
Prices					
Received by farmers	2.06	2.63	2.99	2.41	2.45
Minneapolis No. 2	2.47	3.35	3.80	2.75	
Loan rate	1.79	1.91	2.04	2.17	2.25

1/ Less than 50,000 bushels. 2/ Residual, approximates total feed use.

* Totals may not add due to rounding.

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